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AMAZING STORIES

Science Fiction

Vol. 9

MARCH, 1935

No. 11

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9

Mar., 1935
No. 11

T. O'CONOR SLOANE, Ph.D., *Editor*

Editorial and General Offices: 461 Eighth Avenue, New York, N. Y.

Extravagant Fiction Today Cold Fact Tomorrow

Space Traveling

By T. O'CONOR SLOANE, Ph.D.

TAKING the circumference of the earth as 25,000 miles, an airplane could accomplish the journey in about four days, if it were not for stops for refueling and other requirements. This is about three days, and there is little doubt that some similar and equivalent record will be made after a few years. The practicability of refueling an airplane in flight has been called upon in several duration-record flights, and the system employed in these flights could be used for an "around the world" trip.

There is only one record to break and it is a fictitious one—it is eighty days, the period of Jules Verne's novel, "Around the World in Eighty Days," picturing nearly a twelve week trip as a fictitious record breaker. We cannot imagine months to circumnavigate the globe in an airplane. It seems that there is a good opportunity for a twentieth century Jules Verne to write a story of "Around the World in Eighty Hours." To make a good story, he should not

touch *terra firma* during his trip. He might even tow a glider bearing supplies of oil and fuel to carry him over long stretches of ocean. This would of course interfere with his speed, but would keep him supplied with fuel. The record will be made sooner or later.

In the Pacific Ocean the sailing ships depended to a great extent on the trade winds. These blew in an unchanging direction, sometimes for days at a time, and the captain would often take his ship hundreds of miles out of the course so as to escape the minor, almost major, calamity that used to befall sailing ships, the dead calm. We read of calms of over a month in duration, when a corked empty bottle, thrown over the side one day, would be still there twenty-four hours afterwards.

The American, Commander Matthew Fontaine Maury, carried out exhaustive researches on ocean winds and currents, but his work, of such value but a few years ago, is losing its importance as

sails are supplanted by coal and oil fuel in boilers and by combustion engines.

An exactly parallel problem or series of problems has been studied out for the air pilot and air navigator. A strong head wind may cut his speed down to half what it should be. It is not possible to utilize the knowledge of air for application to airplane courses, as has been done for the winds and currents of the ocean for sailing ships, because like steamers and motor ships, the airplane has to take a definite course and follow it pretty closely. The sailing ship of old days, with its ability to sail nearly within forty-five or fifty degrees of an adverse wind, could often welcome a head wind as being better than none. But the airplane, like the steamer, following its course and watching for landing fields does no tacking, but goes right ahead. It is subject to all sorts of changes in the wind, especially if it is flown low. At a sufficient height these changes in some measure disappear, so that an almost comparatively even atmosphere may prevail. Professor Piccard who has studied the subject and made ascensions of ten miles or more, claims that the stratosphere, at ten miles or greater elevation, is the place for air travel of the future. Comparatively little change in air currents are present there, and if rocket propulsion is developed the relative efficiency, owing to the rarefaction of the air would be high. The propulsion by propeller might not be so good as nearer the surface. It is also somewhat of a problem how the wings would operate in such low pressure to support the airplane. The air at ten miles elevation can be used by a plane, but it is uncertain as to its economy.

It almost seems as if it were time to develop a new type of flying machine to operate in a partial vacuum, in an atmosphere of very low pressure.

The physiological aspect of the case is yet to be satisfactorily studied. Beebe has gone down into the ocean in his bathysphere. He needed no clumsy divers' suit, heavy helmet and leaden soled shoes. For stratosphere flying a cabin, hermetically sealed, with oxygen supply and air purifying and air conditioning, should take the place of the cumbersome helmet and personal equipment of the high-altitude flyer. The passengers, if there were such, should be taken care of by the sealed cabin.

A very curious point is brought out by comparing the range of man's travel, vertical with horizontal. An ocean trip around the world, twenty or thirty thousand miles, is now an ordinary thing. Miles mean little on land or sea in horizontal travelling. But when man attempts vertical travel it is different. It is fair to call three hundred feet the extreme limit for a diver in his suit. This is really more than is practical.

But even three hundred feet, the distance a runner can traverse in ten seconds, is a trivial affair in feet and inches. To attain a hitherto "unfathomable" layer of ocean the Beebe bathysphere, already alluded to, was constructed, and a depth of about 3000 feet was triumphantly attained. This seems an insignificant distance, but the pressure of the water gives a condition, far from a similar characterization. The pressure on the Beebe bathysphere if we multiply its superficial area in inches by 1200 or 1500 lbs., gives the range of pressure the metal has to resist. Man could go to an indefinite depth in the ocean were it not for the high pressure.

There is a mountain in the Himalayas a fraction over five and a half miles in height. We can call this little more than an hour's walk on the level for a high grade pedestrian. But we have seen that man is a very poor vertical traveller. With the assistance of porters to carry his out-

fit, making one camp after another on the mountain and using oxygen for breathing, he has never yet reached the top by climbing, and several lives have been sacrificed in attempts to achieve this useless, *tour de force*, in English, this stunt, for that is all that it amounts to.

With an airplane or a balloon provided with special appliances to protect him from the low pressure and temperature changes man can ascend to over twice this height.

Man can only slightly change his altitude; his range is ten or eleven miles.

The best he has ever done is supposed to be about eleven miles. The heights reached by balloon or airplane are determined by the registration of a barograph, which registers air pressure, and whose readings of air pressure are taken as convertible into miles and fractions of height. This is the best that can be done, for triangulation of objects at that height cannot be carried out from the surface of the earth. It would seem quite possible to triangulate from the car of a balloon to base marks on the surface of the earth and this would at least be an approximation to a definite result. The inaccuracy of the barograph is due principally to the fact that air pressure is subject to local variations. An approximate method of correction for this source of error is to take repeated readings of the air pressure on the ground, during the ascent; one barometer-reading every hour would be pretty good practise. But then the trouble is that the variations in atmospheric pressure at the surface of the earth might and probably would be different from those existing at an elevation.

The endeavor to attain great elevations has had its tragedies in mountain climbing, where ten thousand or fifteen thousand feet is a fair distance to be climbed. Mount Everest has had a number of deaths to its credit, or more prop-

erly to its discredit, but it has never been climbed.

The ascending into the stratosphere with a partially inflated balloon has had a very high percentage of victims, although so few have attempted it. An old time theory of ballooning was that the balloon if it lost its gas would act as a parachute, but this has not held good in stratosphere ascensions. The balloon did not act as a parachute in the fatal accidents which occurred recently.

The balloon for these ascensions is only partly filled. As it ascends the hydrogen expands as the air pressure diminishes, so that as it reaches the limit of its ascent it may be filled and become globular or spherical in shape. In the pictures published of the start or just before it, the balloon is shown only partially filled; when fully inflated as the atmospheric pressure falls, at ten miles or more elevation, it would be a gigantic sphere or spheroid.

The question of going in an air plane or in some machine out into space, beyond the limits of the atmosphere is a curious one. There are many people, who firmly believe that man will yet fly through the wastes of outer space and visit the moon and some of the planets. Mars seems to be the most attractive, because it is one of the nearer planets when in conjunction with the earth, that is when on the same side of the sun, as the earth and in line with the sun and the earth. This is called inferior conjunction in astronomical terminology. In this condition it is sometimes only 35,000,000 miles from the earth, about 150 times as far as the moon is from us. Mars is much smaller than the earth and probably very frigid, because of its distance from the sun, about one and a third times as far as the earth is from the great luminary. Venus about seven-tenths as far from the Sun as is the earth, is so protected

by a mantle of clouds, that it may not be so torrid as might be supposed. Venus is nearly as large as our earth.

So much then for the two most hopeful planets. The moon, destitute of atmosphere and of water, is hopeless. An airplane could not be considered to transport us even to the moon, because the greater part of the space intervening between our earth and the moon is practically a vacuum. We have to picture a reaction machine. If it had power enough to average a speed of a thousand miles an hour, it would reach our satellite in about ten days.

There would be a considerable delay at the start and landing, as only a limited acceleration, positive or negative, could be endured by the human system. It would take some time to start from rest and acquire a velocity of 1000 miles per hour. This velocity would have to be parted with before landing. But what could man do if chilly Mars or cloudy Venus were his destination? The time of his journey might run into years.

To speak of the temperature of a vacuum seems to involve a contradiction in terms. Space is almost a vacuum. A body in space would be subject to the heat radiated from the sun. This in a degree applies to any object in the stratosphere, and the action of the heat radiated from the sun, without an adequate blanket of air, was one of the factors provided for by the aeronauts.

It would require at a speed of 1000 miles an hour, four or five years for an

interplanetary trip to the nearest of our planetary neighbors.

A light-second is the length or distance of 186,300 miles. It is the distance light travels in one second. Now multiply this by the seconds in a year and we will have the light-year. Alpha Centauri is about four and three-tenths light-years distant. We suggest to ardent advocates of interstellar travel to calculate the time required to visit our nearest stellar neighbor the first star of the celestial centaur, *Alpha Centauri*.

For terrestrial measurements and for those in the solar orbit the mile is a convenient unit. But to obtain a realization of stellar distance units, we may reduce some distances in our orbit to light-seconds. The moon is distant from us a little over one and a quarter light seconds, the sun nearly five hundred of the same unit of distance. A light-second is for us upon the earth an extremely long unit by which to measure distances.

But this does not suffice for stellar measurements. For them the unit is the light-year, the seconds in a year multiplied by the velocity of light, nearly 63,000 times the distance from the earth to the sun and the nearest star is over four times this distance from the earth.

The enterprising space traveller would have to contemplate travelling over billions of light-seconds through space to reach our celestial neighbors outside of the solar orbit, and the light-second verges on two hundred thousand miles (186,300) in length.

THE END

A New Serial *Earth Rehabilitators, Consolidated*

By HENRY J. KOSTKOS

Our author goes to future ages for this story and depicts the sad condition of the world many years in advance of the present time and tells of the efforts of earthmen to bring it back to its original condition. The first installment pictures a very dreary state of affairs, but gives a definite hope for the future.

Part I

CHAPTER I

DAY number 761, sidereal hour 14.67, interstellar period 25,439. This is the Central Communiograph Station located on planet A7-TY in the planetary system of Spica, the alpha star of Virgo. The Consolidated Archeological Research Foundation has a communication of great interest. Please listen."

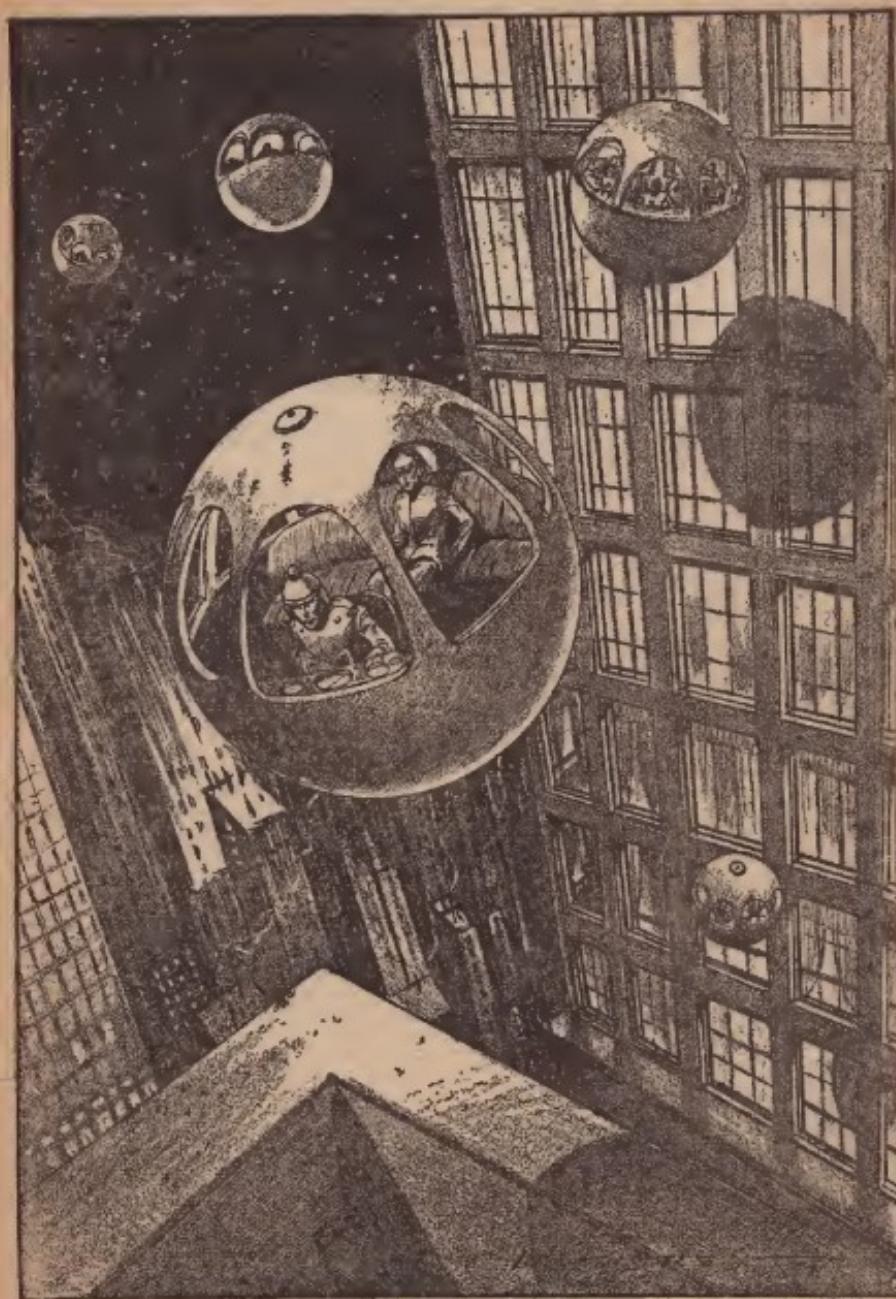
Warren Bancroft was sitting on the swinging balcony of a building in one of the sky-cities of Saturn. Across from him, lounging gracefully on soft cushions of *tula* down, was Nita the beautiful Saturnian who, he hoped, would some day be his wife. As the communiograph spoke, its blue screen lit up with the image of the announcer. Warren was about to switch the instrument off, for what cares a young man in love for the dull discourses of the learned Body of Five Hundred who ruled the million worlds of interstellar space? Indeed, he felt, there were more important things to talk of under the spell of the four jewels of

Saturn* shining brightly in the night sky. But the next words of the speaker froze Warren's hand in its course towards the switch, froze it as his mind riveted itself upon those words that sounded so strange, yet so significant.

"WE have just received a report from Professor Ru Va, excavating under the auspices of the Archeological Foundation, on the extinct planet earth in the system of star R2-KN, otherwise known as sun. As known to all listeners, no trace of former civilization has heretofore been found on earth, despite the allegation of those who claim to be descendants of earth people.

"But now Professor Va communiographs that in the region of 41 latitude north and 75 longitude west a subterranean disturbance pushed an ancient mountain ridge up through the tremendously heavy sheet of ice that covers the entire surface of the extinct planet. Some

*Saturn has nine moons, all of which are not, of course, visible from any one point on the planet. Their range in size from 200 to 3,000 miles in diameter. Their names, from the one nearest to the surface of Saturn to the farthest are: Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, Iapetus and Phoebe. The nearest moon is 117,000 miles from the mother planet's surface, the farthest, eight million miles.



He left the cave cautiously, making sure that there was no Saturnian anywhere in sight, then signalled a passing ball-taxi and instructed the operator to drive him to Nita's dwelling.

strange metallic objects and a plate of what is probably ancient earth-writing have been found, and it is stated that..."

Warren turned suddenly towards Nita. For the first time in years his eyes shone with hope and his chin became firm with determination as he exclaimed:

"The very spot where Gordon Bancroft, my illustrious earth ancestor had his research laboratory!"

Warren was excited. He listened intently to the message, his eyes taking in the beauty of Nita, but his thoughts carrying him to the distant planet, from which he was reported to have descended many thousands of years ago. The speaker told of the difficulties under which Professor Ru Va and his gallant group had labored during years of research upon the icy planet, and how they had courageously faced hardships and disappointments until now they reached the culmination of their ambition. But the speaker gave no further details of the actual discovery; the information he had was too meagre, he must wait for further dispatches from the expedition.

FOR many years Warren Bancroft had smarted under the haughty treatment accorded him by the Saturnians. Here on this planet the caste system was very rigidly observed. Particularly despised was that small group of white skinned people who claimed descent from the earth. True, many had intermarried with Saturnians, Plutonians and the peoples from other planets throughout the solar systems, thereby losing their identity and tell-tale appearance. But the pride of the most rugged of these men and women did not permit them to marry outside of their own race, therefore Warren, like a handful of others, was a true-blooded earthman.

THEN for many years, ever since he had read of the Great Discovery in

Gordon Bancroft's neatly written notes, the dream of rehabilitating the earth had been an impelling force that would not let him rest. A tremendous, yes almost a hopeless task—how could he and a small band of earthmen, haunted by the fear of persecution, ever achieve such a magnificient ambition? The secret of Gordon Bancroft's Great Discovery had lain buried under thousands of tons of ice on earth, but now Warren's hopes leaped high, for Professor Ru Va was excavating in that very region. Could he, Warren Bancroft, lineal descendant of the famous Gordon, go to earth and find the formula for Super-Atmosphere, that wonderful substance that would convert the baser nature of man? And then could he restore the atmosphere to his native planet and start anew a civilization more magnificient than it had ever enjoyed? It was a noble dream, a seemingly impossible dream, to give back to the descendants of earthmen the planet earth.

AND then too, he could marry Nita without question, whereas now he stood but little chance. She was the daughter of the famous Professor of Astronomical Physics, V-Si. In the present day world scientists were regarded as the aristocracy; they were the rulers of all the planets while merchants were treated no better than slaves, creatures who had to be tolerated because they did the menial tasks which were necessary even in a highly mechanized state of existence. And all earthmen were considered the descendants of a race of merchants, therefore they were looked upon as slaves.

"Oh, I am so glad, Warren," Nita looked at him radiantly, "Now if they only discover Gordon's notes in the ruins of his laboratory you can prove your claim to noble lineage."

"That is true," he reflected slowly, looking off far over the moonlit

landscape, beyond the horizon where a pale dot of light marked his beloved planet earth. Then he turned suddenly to Nita, his eyes gleaming with determination.

"No, it will not do to wait for someone else to find the formula of the Great Discovery. I must go and seek for it myself, and then with that knowledge in my possession, make the earth habitable so that we may be freed from this cursed persecution."

The girl glanced up at him quickly and saw by his tightly compressed lips and the angle of his jaw that he was in deadly earnest.

"If any one can do it, you can, Warren. I have high hopes for your success."

"And then, Nita?"

For an answer she snuggled into his arms and looked into his eyes with an expression that required no words to interpret.

THE following morning an earnest group of men huddled around the blue flames of the vapor fire in a cleverly concealed cavern just outside of the Saturnian sky-city of Irru. They were the loyal clan of descendants of earthmen, under the leadership of Ross Griffin, staunch friend of Warren Bancroft. Warren had just finished reading from the diary of Gordon Bancroft. His listeners sat spellbound. With their own eyes they were seeing the last remaining bits of forbidden earth-writing. They admired Warren for his courage in bringing this document here, for even to speak of such things meant death in the horrible Chamber of Purple Vapor.

"It's true, Warren," Ross Griffin interceded, "that Professor Ru Va might discover the secret formula of your ancestor, but the information would probably be misused by our enemies so that

it would be of scant benefit to us. To tell the truth life here is discouraging. If we were only given a free hand we could show these people that we are just as capable of developing new scientific wonders as they are themselves."

Warren Bancroft rose to his feet. An eager light crept into his eyes and the yellow pages of the precious diary rustled as his hand trembled with emotion he could not express.

"I was just coming to that point, Ross. For many years we have yearned for the freedom of our native planet. We have planned and schemed with a hope of rehabilitating the earth, a hope that we feared could never be realized. When we attempted to reach the ears of the Body of Five Hundred what happened? We were laughed at, scorned, despised by these Saturnians. True, we have gained many friends among them, but they too were afraid to help us. Always they shook their heads regretfully and said, 'If you could only prove your descent from the nobility of scientists . . .'

"Now we have our opportunity. The expedition of Professor Ru Va may or may not find those valuable documents. We can not afford to take that chance. We must go to earth now, at once, even though it means slaying those who oppose us. Then when we return with the formula and our plans for rehabilitating the earth I am sure that we can gain the help of the Body of Five Hundred."

Warren glanced at his listeners. Their eyes were shining with anticipation, an eagerness to be doing something, anything, that would free them from bondage on this foreign planet. He continued, explaining his proposition fully, stirring their enthusiasm with visions of a new world.

"That is the reason that I asked Ross to call this meeting. We have gathered many times before, but each time

there was some insurmountable obstacle in our way. We can no longer procrastinate.

"I am going to earth to get Gordon's formula to which I am entitled! I am calling upon you fellows for help. Are you with me?"

HIS last words were drowned by a chorus of wild cheering. Every man rushed to Warren to offer his services. These earthmen, long oppressed and scorned by everyone, now saw a ray of hope. The possession of the formula for Super-Atmosphere would give them vast power; they would be masters of a valuable process and could bargain with the rulers of the universe for almost anything they wanted. It was no wonder that the thing gripped their imaginations, no wonder that they volunteered to a man to go on a journey that would be extremely hazardous.

They sat down and began to discuss their plans more rationally. Several knotty problems had to be solved. The most difficult one was the means of obtaining a space ship, as earthmen were not permitted to own property of any kind and were only allowed to travel from one planet to another through the sanction of the Interstellar Police Office. And there was no air line between Saturn and earth, only an occasional exploration ship journeyed to that extinct planet.

"Getting a space ship is not an easy task," Warren admitted, "but I have a plan that might work. I'll see you fellows later."

CHAPTER II

H E left the cave cautiously, making sure that there was no Saturnian anywhere in sight, then signalled a passing ball-taxi and in-

structed the operator to drive him to Nita's dwelling. The giant sphere rolled away at a terrific speed and lifted itself from the ground to hurtle through the air until it was eased down on the landing roof at its destination.

Warren told the tall Martian who stood guard outside of Nita's door that he wanted to see his mistress. The man glared at him, but there was something in Warren's steady blue eyes and his determined bearing that caused the red-faced man to bow stiffly and disappear inside. When he returned he held the door open and motioned the earthman to enter.

The chamber into which he was ushered was high and hung with dark, flexible metal draperies that gave a musical rustle as they swung rhythmically to and fro. The room was illuminated by a faint, greenish phosphorescence from the ceiling. He blinked his eyes in the weird half-light and peered into the gloom. The draperies at the other end of the chamber parted and Nita entered. She looked as beautiful as ever to his hungry eyes, but, as she stretched out her arms to him, he noticed with a feeling of dismay that she had been crying.

"Why, what has happened, Nita? You appear depressed."

"I have just had a talk with father—about my—about our plans. And . . . Oh, Warren," she laid her head against his shoulder and sobbed as if her heart would break, "He does not understand. Although he likes you well enough he is so afraid of denying Gurra."

Then she straightened up and took a firm grip upon herself and stamped her tiny feet, "And I hate that ugly-faced Plutonian."

GURRA, coal black, with a gnarled and malformed body, had risen to power soon after he emigrated from the planet Pluto. He was made Director of

the Hall of Space Research on Saturn, where Nita's father taught. Although the elderly Professor V-Si harbored no love for the ugly faced Gurra, still he dared not oppose him. When the Plutonian began calling at his home, ostensibly to see him, the professor felt honored, but as time went on he discovered that the real lure was his daughter. He was horrified by the thought and tried to make himself believe that the malformed Gurra would not have the heart to ruin the life of a fine girl like Nita who could never learn to love him. But the Plutonian approached him in his laboratory and with a beastly smile told him that he was going to marry Nita and that Professor V-Si should inform her at once. The professor's feeble remonstrance did not avail him of anything. So to-day, just before Warren came to see her, Nita had been given the revolting news.

Warren did his best to soothe her but his heart was heavy. He had hardly the courage to tell her of his latest plans. The one ray of hope he had was to enlist the aid of her father in fitting out an expedition to find the formula. But now this course was impossible. For a moment he felt discouraged, felt that life was futile, but his old confidence soon came back and he vowed to see it through and fight until the bitter end.

BEFORE he could begin the story of what had taken place that morning in the council of the faithful earthmen, the musical rustling of the draperies became harshly discordant as they were rudely torn aside. Something hobbled into the room. They looked but could see no one. Nita, with a low cry of terror turned a knob at her elbow. The green phosphorescent glow was instantly replaced by a brilliant red light.

There, standing against the black draperies, was the blacker form of

Gurra! Warren had never met the man before, but he recoiled at the sight of the ugly face, the red bulging eyes and the malformed body of the creature that stood leering at him. Every line on his face seemed to express a harsh, savage manner.

The man spoke, his voice was high pitched and grating. His thick lips moved in a grimace and his short horny arms and talon fingers gesticulated meaninglessly:

"Earth-slave. Out of here! Back to your bargaining and bickering with the other slaves. Do you hear me? I have seen enough of your kind."

Warren's lips were bloodless so tightly compressed were they. He clenched his fists until the nails cut deeply into the palm of his hand.

"Nita, wait outside, please," he implored the terrified girl.

"No, no, Warren, you must not. You can not afford to jeopardize your plans at this time."

"Gurra, you know that I could crush your ugly body. We earthmen have stood enough from your kind. But I have better use for you right now."

And Warren strode over to the creature and before the Plutonian could reach for his tube of purple death-gas he pinioned his arms, although the sharp talons cut cruelly into the flesh of his body. The black lips opened to scream but Warren drove his clenched fist into the man's mouth which effectively silenced all further attempts.

"LISTEN pow Nita," Warren's breath came in gasps as his excitement mounted, "this is my chance. Before this monster broke in upon us I tried to tell you all of our plans. Our group, you know whom I mean, met this morning and we decided that it would be absolutely necessary for us to go to earth at once. There is more to the story

which I dare not tell you with this listening," he indicated the cowering Gurra.

"The one big thing that confronts us is the means of getting to the icy planet. When I came here I had all intentions of appealing to your father for help, but now I see that it is impossible. No, I did not mean to offend you, Nita," his voice became soft as he saw the hurt expression in her eyes, "I realize how he feels; he is powerless to help.

"But this creature gave me an idea. I am going to use his space ship! My men are all ready; they are waiting for me at the cave. Come, you," and he shook the black Plutonian, "give me the combination of your hangar lock and tell me where you keep the ship."

"Let me help you, Warren. I can go and inform your men," Nita was quite determined. She had made up her mind to place her future in the hands of this earthman who meant everything to her.

"No, you must not do that. He will only avenge himself on you."

"He might, but he will have to catch me first. Warren, I am going on this journey with you. I am going to earth!"

Warren could not have been more astonished than if she had said that she was about to fly to the distant black star Urma. Then he thrilled with secret adoration. He was proud to know that she thought so much of him that she would undergo the untold dangers and hardships of such a journey. But he shook his head sadly and reluctantly.

"I'm afraid that it can't be done, Nita. Nothing would please me more under different circumstances, but now...."

"Please don't argue with me," she stamped her little foot determinedly, "I am going! Would you leave me behind with that?"

SHE pointed to Gurra who was staring at them evilly, his mouth wide open as his mind slowly grasped the significance of the drama that was taking place. Then he flushed with anger and waved his short, horny arms at Nita.

"You can't go, you can't go," he half pleaded, half bullied in a croaking voice.

Warren drew back his clenched fist and the man cowered to the floor and said no more.

"Warren, we have no time to lose. Tell me where to go and I will have your friends prepare to leave Saturn immediately. I know where Gurra keeps his ship and he has told me the combination. Father and I have gone on several short trips with him and he has even shown me how to handle the controls."

The descendant of earthmen thought seriously about the new angle of the situation. Then the furrows on his brow smoothed out and he smiled happily at the courageous girl.

"I hardly dared to expect this, Nita, but, now that you are firmly determined to go with us, I must confess that I am overjoyed. There are many dangers but I'm afraid that there would be many more if you remained behind," and he looked significantly at Gurra.

He pushed the black man into a corner from which he could not escape and drew Nita out of earshot. Here in a low voice he rapidly sketched his entire plan and gave her explicit directions for finding the earthmen.

HAVE Ross Griffin direct the men. You might ask him to send Palmer to me at once at the hangar so that we may prepare the space ship. But before you go, hadn't you better pack your personal belongings—we are not coming back here. I'll be waiting for you

at the hangar." A sudden idea came to her.

"What are you planning to do with that?" she indicated in the direction of the Plutonian.

"There are several things I would like to do with him, but for the time being I'll just put him to sleep right where he is. No, it will not be anything serious," he assured her when he saw the questioning look on the girl's face, "he will wake up, after we are gone, without being much worse off for his long sleep."

Immediately after Nita had finished her packing and had left the building, Warren removed a small metallic tube from a pocket in his garment and pointed it at the terrified Gurra. The creature's red eyes bulged with fear, but before he could open his lips to squeal the bluish vapor reached his dilated nostrils and his head fell back upon the hard floor. He lay there unconscious with mouth wide open, black fangs protruding in an ugly Satanic grin.

Warren wasted no time. He picked up Nita's belongings and hurried in the direction of the hangar. He was cautious to avoid the terrible Vigilantes whose deadly fire-spears had snuffed out the life of more than one poor earthman for very little or no reason.

CHAPTER III

FORTUNATELY Gurra's space ship was housed in a secluded part of the sky-city and he reached it without arousing any suspicion. Remembering the combination Nita had given him, he pushed a series of tiny buttons, whereupon the entire cover panel of the hanger slid open noiselessly at his feet, revealing below the shining metallic vehicle that was to carry the little band of earthmen and one loyal and lovely Saturnian girl to the cold regions of an extinct planet.

Warren stepped down and began a hasty inspection of the flyer. Nita had told him that it was propelled by a new gas mixture that had a nozzle velocity many times in excess of the vapors used in the motors of the old style ships. The rocket tubes appeared to be sound; they showed but little pitting and would be good for many long flights before they needed replacing. As he was about to step inside of the space ship he heard the sound of voices above him, and looking up he saw Nita, accompanied by Ross Griffin and X. Palmer. Both men were carrying with some difficulty several heavy parcels and metal tanks.

"That's fast work, Warren," Ross called down to his friend cheerfully, "getting a ship on such short notice. Before Nita rounded us up I'll confess that I was a bit skeptical about having the good fortune to be able to rocket off to the earth. Palmer and I picked up these tanks of liquid gas in case Gurra's ship was short of fuel. And God knows where we will have to go before we are through with this journey."

"Where are the other fellows?" Warren asked after they had entered the ship and X. Palmer was beginning methodically to test the propelling and control apparatus.

THHEY are coming one by one to allay suspicion. There's Vic Sylvan now," Ross replied as a blond-haired young giant stepped quietly through the airlock to greet them.

The remaining members of Warren Bancroft's crew of earthmen appeared shortly after, coming in one by one, all of them carrying provisions and supplies that had been stored for just such an eventuality. Their eyes which were once dull and glazed now lit up with the sparkle and anticipation of adventure.

Counting Nita and Warren there were eleven people in the crew and on the

passenger list of the "Earthbound," as the Plutonian's ship had been renamed by its new masters—eleven people united by the common bond of earth ancestry and for the common purpose of establishing for themselves and for their families the privileges and esteem which they believed should rightfully be theirs.

Warren and his crew wasted no time on idle sentimentalism. There was work to be done. Delay might prove fatal to their plans. At any moment Gurra or the Vigilantes might pounce upon them, and not only would their plans be balked, but they would all most certainly be subject to the tortures of the horrible Purble Vapor, and if unlucky enough to have remained alive, be exiled to a living hell on Saturn's farthest satellite, Phoebe.

Nita donned a mechanic's garment and accompanied Palmer about the control and power rooms, checking the motors, the tubes, the instruments, the controls, and in fact every vital part of the "Earthbound." She had inherited much of the scientific and mechanical talent from her father, for more than once Palmer conceded some mooted point to her and cheerfully followed her suggestions. Warren in the meantime was studying the celestial charts and plotting their angle of projection.

In order to take off with the assurance that they would be headed towards the earth it was necessary to estimate the proper elevation of the ship's nose as well as its lateral direction. Otherwise much valuable fuel would be expended energizing the steering rockets. The ship rested upon an adjustable cradle which could be rotated and elevated as required to point the ship toward any spot in the heavens. Verniers with micrometer graduations enabled the navigator to place the vessel in its

proper position before the take-off. This universal adjustment was similar to the polar and declination axes of a telescope mounting which permits the instrument to be directed to any point in the sky.

WARREN was just completing the final adjustments on the quadrant when he saw the interior of the hangar suddenly enveloped in darkness. He looked up in alarm. The roof of the hangar was closing! Then he heard the shrill voices of Saturians and louder than any others, and more grating, came the voice of Gurra! Warren having heard it once could not mistake it. They were trapped. The crafty Plutonian had awakened from his stupor prematurely and had called out the Vigilantes.

"It would have been better if I had finished him completely," Warren thought bitterly as he gave a final twist to the turntable control before dashing for the open door of the air lock. The door was fifty feet away, an easy sprint would bring him there in a few seconds, but those seconds may as well have been hours, for the lower entrance to the hangar between himself and the ship was now alive with rushing Vigilantes. Before he could retreat they were upon him. Fortunately the entrance was too narrow to permit more than a limited number of them through and Warren, in desperation, struck about him with the long heavy sighting tube he had been using in adjusting the cradle.

The skull of the first Saturian who reached him was crushed; the second Vigilante drew back with a cry of pain as his long arm dangled broken and useless. The others, seeing that here was no easy conquest, circled around him cautiously, waiting for an opening.

The tumult of the attack had attracted the attention of the men on

board of the "Earthbound." When Ross Griffin heard it he took one look through the observation window and shouted to the crew. Vic Sylvan's blond head was the first to emerge from the ship. There was a long gleaming metal rod in his hand, as big around as his massive arm; his eyes shone with the fierce light of battle. With a roar he was upon the astonished Vigilantes and before they could recover from their surprise, three of them were lying lifeless upon the smooth, metal floor of the hangar.

"WE'RE right here with you, Mr. Bancroft, and by God we're sticking . . . and fighting . . . while there's a kick in us."

The descendant from ancient Vikings paused in his speech every time he rendered another Vigilante *hors de combat*.

By now the little band of Earthmen had joined their two comrades and it was a matter of just a few moments and some lusty blows before those Saturnians, who were able to run, took to their heels and fled in panic, crushing and clawing one another in a desperate effort to squeeze through the narrow exit of the hangar.

"Come boys, we haven't a minute to lose. If we don't take off at once they will annihilate us with a fire-ball. Never mind trying to open the roof now," he called to Palmer as the grim little engine expert was attempting to start the hangar motors. "We'll crash through!"

BACK in the control room as soon as they were all aboard and the door was tightly sealed, Warren, Palmer and Nita worked frantically to start the repulsion rocket motors. As the gases hissed into the mixing chamber, Warren watched the pressure gauge anxiously. Would the needle never reach the red mark? He was afraid to fire the

rocket blast before the gases were sufficiently compressed, for not only must the huge metal ship be given sufficient impetus to overcome the pull of gravity but it must burst through the massive chromite sheets of the hanger roof panels. The seconds were like hours; not a single voice broke above the hissing of the gas.

"There it is, Palmer! Hold it a moment. Now, fire!"

A terrific explosion that almost split their eardrums as the noise was amplified a thousand times in the closed hangar, then a crash against metal, a tearing and crushing, then through the observation window they saw the lights of the sky-city below them, and above them the stars. They were free!

The interior communiograph spoke, "Jules LaCosse in the forward compartment, sir. Nothing damaged except a slight groove in the ship's nose."

Reports from other sections of the "Earthbound" bore out the wisdom of Warren's hasty decision that the ship would tear through the hangar doors without any serious harm to itself. Warren checked his course, firing a light blast from the starboard steering tube, and then set the automatic controls straight for the icy planet, earth.

CHAPTER IV

FOR many days the "Earthbound" hurtled through the black void at a speed in excess of 200,000 miles an hour. Even in that age it was a long journey from Saturn to earth, requiring five earth-months of time. Later on, it is true, after Laj Cir, the great scientist of the planet Tuxul in the system of Markab, had harnessed the Ether Ray, the flight could be made in a few days. But the earthmen in the crew were contented. They were away from their aggressors, and Warren and

Nita were happy in the company of each other. And there was a definite and worthy objective for all of them, an opportunity to remove the stigma attached to outcasts and to establish a new world for themselves.

Two days journey distant from earth Warren was checking their course. Nita was in the control room with him studying the heavens through the televiser. Suddenly she gave a startled little cry and switched on the screen of the instrument.

"**W**ARREN, there's a space ship following us!"

Bancroft dropped his charts and hastened to the darkened vision booth. The large screen showed myriads of stars and planets in a field of black, while directly in the centre was a foreign object that loomed larger and larger even as he gazed.

"Turn on the magnifier, Nita. It's a ship sure enough," he declared as the long silvery object filled the screen almost entirely. "It has the red stripes of the flag of the Space Police."

He made some hurried calculations, then turned to the transmitter of the interior communiograph:

"Hello, Palmer, we just picked up a police ship in the televiser; she is travelling about 250,000 miles an hour and is now 100,000 miles behind. At that rate she will reach us within two hours. Can you start the emergency tubes?"

"They are ready for service, Mr. Bancroft, but I am afraid that our fuel supply will run low if we use them."

"Cut them in. That is a chance we must take," Warren ordered.

Ross Griffin in answer to Warren's summons had rushed into the control room and the three anxiously watched the police ship on the screen of the televiser.

The first half hour after the emergency rocket motors went into action their pursuer dropped gradually behind, but when Warren again took space measurements he found to his consternation that the police ship was gaining on them.

"They too must have turned on additional power. Hello Palmer," he spoke into the transmitter of the engine room circuit, "Can we get more speed?"

"We've put on everything we have, Mr. Bancroft. The cooling system on two of the tubes is closed and I am very much afraid that they will burn out. The pyrometers show a temperature of 4,500 degrees Fahrenheit now . . . wait . . ." and his voice died away, to be replaced by hasty, unintelligible orders that Palmer was shouting in the engine room. There was a sound of something sizzling and steaming, then Palmer in an agitated voice, spoke again:

"I'M sorry I had to rush off. Those confounded tubes went out just now. Melted clean away. No, there was no one hurt," he reassured the anxious navigator, "but I will have to cut down the gas charges to save the other tubes."

"Well, do your best, Palmer, but I don't see how we can avoid being overtaken within a short time."

The three people in the control room kept their eyes glued on the televiser screen and with sinking hearts watched the huge ship gain on them. Was this to be the end of all their hopes and ambitions? Bancroft thought fast in the short space of time he had to devise some ruse that would save them. They were inside of the belt of asteroids so they could not seek refuge upon one of them. The nearest body was Mars; to reach it before they were overtaken was an impossibility now that two

of the tubes were burned out and the gas pressure had to be reduced in the others. As for offering resistance, they had no ammunition for any weapons larger than their portable blast-guns.

Warren was not concerned as much with the thought that his plans would be frustrated and that he would be sentenced to death as he was with solicitude over the fate of Nita. He reproached himself for having permitted her to come on a mission that was so hazardous. He felt that he had done a very selfish thing indeed. After all, Nita had her father who would not have seen her unhappy for all the world and surely he could have devised some way of keeping her from marrying Gurra. A six year course at the great University of Betelgeux on the remote planet B2-CR for instance, would have kept her away from the ugly Gurra. Well, it was too late now to retract what he had done, they must face what the future had in store for them.

THE fast approaching ship was of monstrous size. Warren recognized it as the largest and speediest of the vast space-police fleet. It was usually stationed on Pluto but must have arrived on Saturn just in time to serve Gurra's needs. No other ship could have overtaken them after the start they had.

The space communiograph was buzzing a calling signal. Warren switched it on. A harsh voice protruded itself from the loudspeaker into the control room:

"Heave to, Warren Bancroft. You can not possibly escape us. We will release the magnetic grapple. No foolishness now," the voice warned.

Warren cut the transmitter in. "Under what conditions are you taking us?" he asked.

"Your surrender must be uncondi-

tional. You are charged by Professor V-Si with kidnapping his daughter Nita, and by Gurra with attempted murder and the theft of his space ship. The penalty for any of these offenses is death in the Chamber of Purple Vapor. If you surrender we will spare the lives of your men."

Warren looked at Nita and then at Ross. His eyes showed no fear; they were quizzical; there was just a trace of a grim smile playing around the corners of his determined mouth.

"I am ready. To put up a fight would be futile. Gurra must have used up all of the fire-ball chemicals on this ship, there isn't an ounce on board."

"Warren, are you saying this to save us?" Nita's voice was accusing.

"He is, but he's not going to get away with it," Ross cut in. He was determined. "Nita and I talked this over and we are sticking it out, fighting it out, if you please. You don't for a moment believe that lying gang of Plutonian cut-throats, do you? Promise us our lives, will they?"

He turned to the interior communiograph, "Palmer, this is Griffin. Stand by to fire the steering blasts when the police ship comes abreast of us." Then to Warren: "There is a slim possibility that we can out-maneuver them. At least I am going to try it, come what will."

Warren looked at Ross gratefully. Then placing one arm around Nita's slim waist he walked over to the man and put his hand firmly on his shoulder. "With staunch friends like these I feel I could conquer the world!" he said solemnly.

When the giant police ship came alongside they saw the leering black face of Gurra through a porthole. He was talking to them over the communiograph, admonishing them to stop, threatening dire things if they dared

disobey. When the "Earthbound" maintained its even pace without complying with his wishes he resorted to trying to bully Nita. His shrill voice broke into the control room unpleasantly.

"Your father has asked me to bring you back, so you must obey him. He gave his consent to my marrying you and commanded that you give up your earth-slave," he wheedled.

A tinge of annoyance spread over Nita's delicate features. Then she flushed with indignation as she grasped the transmitter.

"Gurra, you ugly black monster, you lie! My father never gave his consent willingly. You threatened and bullied him into it. As for getting me—just try and do it!"

The black face at the porthole became horribly distorted with rage and thwarted hope. The lips parted to bare the crooked fangs. His reddish eyes were rolling with rage. He cursed out a command to the ship's officers and then shrieked into the transmitter:

"You Saturnian she-devil! I have had enough. You and your earthling will spin through space for eternity—not as living creatures—but as charred flesh and bones. See if you can defy a fireball!"

"Oh, the horrible monster, he wouldn't dare, would he Warren?" Nita looked up in alarm.

"I'M afraid that he is capable of anything, although this sounds like a bluff. The police are in his pay and they will follow his orders without question. See, even now we are spinning around, helpless in the meshes of the magnetic grapple projected from their ship. I'll try Ross' idea, a blast from the steering rockets."

He shouted an order to the engine room and a fiery flash from the side of the "Earthbound" was Palmer's re-

sponse. Although the ship jerked like a startled fawn, she snapped back as if held by elastic bands and crashed violently against the hull of the police vessel. Again they tried it and again the same thing happened. It was of no use; they were powerless in the grip of their enemy.

THE two ships drifted about three hundred yards apart. Then through the observation window the occupants of the "Earthbound" saw an incandescent body, a ball of fire, leave a cannon-like tube protruding from the side of the police ship.

"A fire-ball!" Warren shouted, "I did not think the devils would do it. Come Nita. Let me hold you in my arms for the last time, and as she rested her head upon his shoulder and closed her eyes to shut out the blinding intensity of the slowly approaching fire projectile, she whispered softly,

"I do not mind, Warren, I am happy—more happy here with you, knowing that this is the end than I have ever been before. Hold me tightly, and let us dream of our future. Our future, Warren, in another world."

A tomb-like silence pervaded the "Earthbound." The rocket motors had been shut down; the charging apparatus was likewise dormant. There was an awed silence throughout the ship. Warren and Nita had drawn into the shadow of the switchboard, while Ross Griffin stood upright like the good soldier he was, looking with unblinking eyes straight into the dazzling fire-ball, unmoved, unperturbed by the imminent catastrophe. A moment of respite for these earthmen and the brave little Saturnian girl before the hard, metal plates of the ship would become steaming fluid, before bodies that once moved, and loved, and laughed would become brittle and charred fragments of humanity.

BUT suddenly the silence of the void was punctured by sharp staccato tappings on the plates of the vessel, like hailstones, with occasionally a heavier thump that caused the ship to sway and pitch to a dangerous angle.

"A shower of meteors!" Ross exclaimed, "That was a large one." Then he became excited, "Warren, Nita, I can't see the police ship any longer! We are moving! We are falling away from them!"

The occupants of the control room on the "Earthbound" were thrown to the floor violently as the ship lurched and literally stood on its nose before being borne down, how first, at a tremendously increasing speed by a huge meteor which had struck the vessel with a reverberating crash. By the time Warren, Nita and Ross had regained their feet the attacking ship was out of sight. And they were still plunging wildly through space to the safety of distance, thanks to the impact of the meteor.

Searching the ether through the televiser, Warren discerned the faint outlines of the police ship many thousand miles away. The communiograph picked up some feeble signals of distress that indicated that Gurra's vessel had been disabled by a meteor.

The feeling of tension and hopelessness that had pervaded the occupants of the "Earthbound" gave way to relief as they breathlessly discussed their miraculous escape from what appeared to be certain destruction. Palmer announced that the ship had not been damaged by the meteors and he was ready at any time to turn on the motive power.

Commanding Palmer to start the rocket motors, Warren headed the ship in the direction of the earth which was now a large white sphere in the sky. The next day they reached the outer blanket of dense atmosphere.

THE surface of the earth had been stripped of its atmosphere many thousands of years ago due to the counter attraction exerted by a huge celestial body. This wandering body had approached within a few thousand miles and drawn most of the air away from the surface, leaving but a thin layer of it enveloping the globe. When the roaming star or planetoid passed from sight the largest part of the earth's atmosphere remained outside of the gravitational influence of the planet where it continued to rotate as an invisible satellite around the earth.

At once the earth became chilled. The waters of the sea turned to ice, and the land froze solidly. It was like the coming of another ice age, only more permanent in its effects and more devastating.

Fortunately for the inhabitants of the planet, a period of approximately three months elapsed before it became impossible for life to exist. It was during this time that feverish activities were begun to leave the earth and seek refuge upon some other planet. Space ships were just being perfected, although they were still crude of design and unsafe. Gordon Bancroft, one of the foremost scientists and pioneer interplanetary explorers of the period was besieged with pleas and requests for transportation. In the short time remaining he labored night and day to construct as many space ships as it was physically possible for them.

THE hardships suffered by the earthmen during these icy days were heartbreaking. Their food was entirely consumed, fuel could only be obtained by blasting through steel-hard sheets of ice.

Millions had starved and millions more were frozen to death, and how many succeeded in leaving the dying

planet no one knew. Gordon waited until the very last to take off. Another day and he too, with his family would have perished.

After being refused refuge on Jupiter he was allowed to land on Saturn, where he and his small band were promptly bonded into slavery. In time his descendants had been freed, but the stigma of inferiority was never removed.

With the coming of the ice age, great changes were wrought upon the physical aspect of the earth. All traces of the former glory and civilization were mowed down by tons of ice, and archeological expeditions from other planets were unable to uncover anything of significance. But now, owing to an upheaval of the crust of the earth in a region that was once known as northern New Jersey, a portion of the ground with its story of ancient life, lay revealed.

WARREN had no instruments that would tell him what portion of the earth he was about to land on. Perhaps painstaking maneuvering would enable him to find the desired latitude and longitude, but he dared not take a chance of delaying. He planned to leave the ship with instructions for it to follow as soon as he called. When he reached his destination he would send out a directional beam which would guide the "Earthbound" straight and true. Then again, Warren was anxious to explore as much of the surface of the earth as possible, for which purpose the overland trip by sled would serve admirably.

The mechanics under the direction of Palmer had built a closed cabin sled, fitted with small rocket tubes. This vehicle could be propelled over the surface of the ice at a speed estimated in excess of a thousand miles an hour. The cabin was airtight and large enough

to accommodate four people comfortably. It was equipped with heating elements, a communiograph set, scientific instruments and portable blast guns for defense. Relying upon established data concerning the density of the how rare earth atmosphere, Palmer had equipped the sled with a pair of folding wings which would sustain them when hopping from one elevation to another. This would be particularly useful in traveling over the difficult mountain passages.

By now the "Earthbound" was enveloped in the blanket of hazy upper atmosphere. Warren switched on the communiograph to every part of the ship.

"Stand by for landing," he commanded.

The stern rockets had been cut off and the bow counter-force tubes were brought into action, slowing the "Earthbound" slowly so that she eased down to a perfect landing on a smooth ice covered surface. In fact the entire country, as far as the occupants of the ship could see, was absolutely level. Everything appeared grey and forlorn. Even the sun was obscured so that it illuminated, but did not warm, the extinct planet. Already the extreme cold had begun to condense the moisture in the atmosphere on the outside hull, until the portholes and the observation windows were covered with a thick coating of frost. One of the mechanics appeared and attached an electric heating element to the window which melted the ice and permitted a view of the outside world.

As all preparations had been completed for an overland trip in the sled, nothing remained but to take observations to ascertain their location and to select the members of the expedition. By using a specially designed instrument that combined the features of the sextant and chronometer but required

neither sun, stars nor Greenwich time to determine latitude and longitude, Warren plotted his location on a chart.

"WE are plumb in the middle of what was once known as the Pacific Ocean. No wonder everything is flat as far as we can see. Our destination is 5,760 miles in a straight line if we set our course north-east by east. Allowing for the irregularities in our route we will probably have to travel over six thousand miles. Not counting on any unforeseen delays we should reach New Jersey in six hours," Warren was explaining to Nita and Ross Griffin.

"Now for the crew. Ross and Palmer and I will constitute the male members of the expedition, and in order not to slight the ladies," turning to Nita whose face was getting longer and longer at the prospect of being left behind, he bowed elaborately and added, "we will take all of them along. But, mind you, Nita, I am not doing this willingly," he warned, "I would much rather have you remain behind in the security of the ship. Here they could never find you, but out there," he indicated with a sweep of his hand, "I am not so sure about it. But I realize how keen you are about going along with us, so I wouldn't stop you for all the world."

After giving some last minute orders to Wass Dorn who was to remain in command of the space ship, Warren and his companions climbed aboard the sled which the crew pushed through the air-lock out upon the ice. The men who had to expose themselves to the rigorous climate donned special garments which kept them warm and they put on helmets that supplied air. The suits that were to be worn by the four members of the overland expedition when they found it necessary to leave the cabin of the sled were double walled

and warmed by a radioactive element. They were equipped with helmets and an apparatus for manufacturing artificial air.

Warren sat down at the wheel in the tiny cabin and snapped on the rocket ignition switch. There was a red flash and a reverberating roar as the sled leaped forward like a frightened deer. The four adventurers waved a hasty farewell to their companions and they were off across the trackless waste. Fortunately Warren and Palmer had driven rocket sleds on Saturn and were therefore familiar with the peculiarities of these strange vehicles. Sleds required greater vigilance in handling than space ships as the contour of the ground had to be watched constantly, although this condition did not trouble them on the smooth frozen surface of the Pacific Ocean. When they reached the land, conditions would be different and travel more difficult.

THE tree descendants of earthmen felt the tug of their home planet deep down in their hearts. While for many generations their forefathers had lived upon an alien world, still a nameless something kept telling them that at last they had come back to their rightful heritage. Not for a moment would any of them admit it, but they looked with wistful eyes upon the bleak solitude and hid from one another eyes that lost brightness with mist.

Three hours of fast traveling brought them within sight of a high elevation. This was the coast of California, with the Coast Range Mountains in the background. Warren worked a lever which brought the wings of the sled into service, and just before they reached the high coast he increased the speed and adjusted the elevators so that the vehicle lifted itself from the ice and soared up over the first obstruction. By

skillful maneuvering Warren was able to avoid irregularities that might otherwise have been serious barriers to their progress.

THE journey over the range of mountains was, however, more difficult. Here they experienced their first near-tragedy. The sled was traveling on its runners up the steep slope with the front of the vehicle pointing up an angle of forty-five degrees. It was necessary to proceed cautiously, yet fast enough to prevent stalling on the heavy pull. Rounding an icy hummock, where the view ahead was obscured, the sled encountered a wall of ice. Warren cut in all the rocket tubes in order to lift the vehicle over the obstruction. She sailed up and cleared it perfectly, but came down heavily on the other side. There was a cracking and crunching of ice as the sled broke through a layer of frozen surface. To their horror the travelers saw that they were crashing through and falling into a deep crevasse. The sled was slipping sideway, the runners screeching shrilly as if in protest.

"Charge the right hand steering rockets, Palmer. Don't move anyone," Warren warned as their hearts thumped wildly.

Palmer worked feverishly turning valves and starting the auxiliary compressor. It required but a few moments, but to the white-faced occupants of the careening sled it seemed like ages.

"There it is, Mister Bancroft," the engine expert panted.

"Hold tight, everyone. Here we go!" and, as Warren threw the switch, a flash of fire came from the right hand tube, followed by an ear-splitting explosion from the heavy charge.

The sled shot sideways as if thrown by a giant hand. Luckily for the adventurers the force of the rocket tube

was sufficient to hurl the sled up to the plateau above where it landed on its side, precipitating its crew headlong over one another.

Fortunately no one was hurt and the sled was undamaged except for a broken window. Although the cabin was equipped with a glass which had the strength and flexibility of fine steel, the concussion was too violent for it to withstand such a shock. Having foreseen such a contingency, spare panes of glass of the exact size were available and the damage was consequently repaired in short order.

During the brief period when the cabin was open to the outside world the cold air had penetrated, chilling everyone until their limbs were stiff from the exposure. The air within had escaped which rendered breathing difficult. They had not the time to don the special garments before it happened, but now, upon the insistence of Warren they pulled the clumsy suits over their regular clothes.

"It's best to be prepared in case something like this happens again," he explained.

Since the beginning of the journey over the frozen world Nita had been silent, not wishing to obtrude herself upon the busy navigator and his companions. She had much time for reflection and planned for the future, when Warren would become established as a reputable scientist in this new world. Although she loved her home planet, Saturn, she looked forward happily to the day when the earth would be habitable.

CHAPTER VI

THE mountainous region between the west coast of the United States and the central part of Colorado was difficult traveling. It re-

quired two hours of skillful piloting on the part of Warren and must have been extremely nerve-racking to the others. But they did not voice their feelings, recalling instead their past experiences or speculating optimistically about the future.

Ross Griffin had been in constant touch with the "Earthbound" by means of the communiograph. Wass Dorn, who had been left in command of the ship, had nothing of interest to report; everything was just as they had left it. The long range televistor on the space ship had not picked up any other craft so there was no means of knowing whether or not Gurra had finally been able to give chase.

The Mississippi River was marked by a winding canyon of ice that extended north and south as far as they could see. Soon after, they reached the Ohio River and traveled along in its frozen bed for a time until Warren put on skimming speed and the sled lifted up over the mountains of West Virginia and Pennsylvania. Warren and Ross checked their position constantly and readjusted the course of the sled as required.

They had been under way for more than seven hours now and would soon reach their destination. The faint outlines of the sun could be seen dropping behind white-peaked mountains of ice, lighting up the western horizon with a faint yellow glow. Soon it would be pitch dark, for twilight lasted but a few minutes in the rarified atmosphere of earth. Anxious to reach the site of Dr. Ru Va's camp before dark, Warren ordered Palmer to energize the spare rocket tubes to increase their speed.

NITA was peering through the gloom but could see nothing with the naked eye. She reached for the portable, short range televistor and

directed it straight ahead on their course.

"Oh, Warren, I see a light!" she shouted excitedly. "Look, there just ahead of us."

He took the instrument from her and looked. Sure enough, a tiny yellow glow that became more pronounced as they approached, marked the site of human habitation.

"It must be Dr. Ru Va's camp. Hm—that's queer. I can't see it now. The light is gone."

With a puzzled expression on his face he returned the instrument to Nita who searched the darkness ahead and finally laid the televistor down.

"I can't see it now either. I am sure that it was a light. Perhaps they turned in for the night and put it out."

Warren had slowed the sled down to avoid running past the place and at low speed he crept up the last incline to the location that his instruments told him must be the camp site of the expedition. He was positive that this was the very spot that the light, which he and Nita had seen, came from. But instead of hearing voices of welcome in response to their shrill signal horn, nothing but echoes came back to the expectant group.

ROSS switched on the high powered rhodium illuminator and swung it about in an arc. The brilliant beam lit up the blue-white ice and dazzled the eyes of the watchers. There were heaps of red earth and rock where the expedition had been excavating and as the light swept around it caught the flash of metal. Ross Griffin immediately focused the beam upon this mirror-like surface.

"Zistite metal explorers' huts!" Warren cried, "Hold it there, Ross."

In the brilliant light they had no difficulty in seeing clearly. Two huts built of the new non-conducting metal zistite stood revealed not more than a

hundred yards away. This metal had been adopted for building portable huts and even houses in regions where extremely high or frigidly low temperatures prevailed. The metal was almost an absolute non-conductor of heat and was therefore admirably suited for this purpose.

There was no sign of any one about the place and as final proof that the cabins were deserted they saw that the doors of both of them were wide open and swinging in the sub-Arctic wind.

"We will have to get out and search around. I don't exactly like the looks of this," Warren said as he picked up a blast gun, "Just in case we need it," he remarked significantly.

THEY had strapped ice creepers to their shoes, a necessary precaution when walking on the glass-smooth surface of this frozen planet. Having been cramped in the close quarters of the tiny cabin, the four were stiff and found it difficult to walk. After stumbling several times they reached the first hut. Warren had a premonition that there was something inside that Nita should not be permitted to see.

"You folks wait here until I come out. I'll call if I need you."

And with this he walked in, flashing his rhomium illuminator around inside. The sight that met his eyes was a horrible one. There, thrown brutally into bunks that lined the wall were the headless blood smeared bodies of five men. The red blood was frozen as it had dripped in rivulets from jagged stumps of necks. Dumped unceremoniously in a heap in one corner were the heads that once belonged to the bodies. Warren saw the room reeling around him; he felt a queer sensation in the pit of his stomach, then shut his eyes and staggered outside.

Nita was alarmed. "What is it, War-

ren? You are white. Do you feel ill?"

"I'll be all right. It's horrible in there. Don't go in, any one. Five men, brutally butchered. I must take a peek into the other hut. Wait here."

Although still white and shaken, Warren resolutely walked in through the open door of the second cabin. He reappeared in less than a minute. By now he had regained his self-possession, but was plainly puzzled.

"Nine of them in there," he indicated the second hut with his head, "They too, were murdered. Not a soul alive anywhere; I can't understand it. And there were some living beings here not very long ago according to the light we saw.

"Suppose you take Nita back to the sled, Palmer, while Ross and I try to puzzle this thing out. Better try to get a little sleep, Nita, we may be late in returning."

When the others had left Warren gave Ross a detailed account of what he had found in the huts. Try as they would they could not for the life of them come to any satisfactory solution of the mysterious murder of a harmless old scientist and his colleagues. That it must have been done by some type of thinking creatures was self evident as a close examination of one of the bodies disclosed traces of seared flesh where the head had been severed from the body.

"IT was unquestionably done with a flame-knife," Warren muttered as he forced himself to perform the unpleasant task of examining the corpses, "and flame-knives are the favorite weapons of Plutonians. I wonder if it could have been . . ."

He was interrupted by a shout from outside. It was Nita running towards the cabin. He hurried to meet her before she should enter the horrible place.

"Oh, Warren," she panted, "I just heard the most awful thing over the communiograph. The Central Universe Police, acting upon information received from Gurra, have been ordered to earth to arrest you for kidnapping me. And that is not the worst, Warren, you are charged with murdering Dr. Ru Va and the members of his expedition!"

FOR a full minute Warren stood there without answering. Then the unbelievable accusation registered fully in his mind. He clenched his fists to suppress his pent up emotions, but answered calmly enough as he reconstructed the events as he thought they had happened:

"Ross and I had just arrived at the conclusion that the explorers had been murdered by means of a Plutonian flame-knife. Now it is quite clear that Gurra must have arrived here in a space ship of his own after abandoning the police craft. He then surprised Dr. Ru Va and his men, murdered them, took all of their findings and then brazenly communiographed to the Chief of the Universal Police that I was the guilty one.

"Now the question is, where is Gurra and his gang of cut-throats and how much time do we have before the police swoop down upon us?"

These questions were difficult to answer. But it was evident to Warren that he must establish proof of his innocence. He knew well enough that the sworn testimony of Nita and his other two companions would not avail against the corruption of the Court of Interstellar Justice, after Gurra's powerful influence was brought to bear upon the judges.

However, Warren had no intention of being caught defenseless. He walked

back to the sled with Nita and picked up several black boxes containing delicate scientific instruments. He removed a micro-camera and set it up, close to one of the bodies in the cabin, and then focused the sensitive lens upon the severed flesh. In a few moments he had a permanent record of the microscopic structure of the seared tissue.

Then he unpacked the recording-analyzer which registered on a specially prepared chart a chemical analysis of the carbonized tissues. With these two instruments used in conjunction Warren hoped to establish beyond dispute the fact that the weapon used was a flame-knife, a devilish device which only a few high-born Plutonians were permitted to own.

Warren and Ross were weary by the time they completed the work of recording the evidence and they left the cabin to return to the sled for a night's sleep. In the morning they intended to begin excavating the frozen ground in search of Gordon Bancroft's laboratory which they estimated to be not more than two miles from where they were. Outside it was pitch dark. The heavy outer blanket of chilled atmosphere did not permit the moonlight or starlight to penetrate to the surface of the earth.

FOR some unknown reason Nita had switched off the rhomium illuminators. This puzzled Warren for a moment, then he accounted for it by assuming that the glare was so strong that it would not permit her to sleep. She was tired, he thought, and needed all the rest she could get. His portable illuminator flickered feebly and then died down to a faint red glow. The steady use of it had exhausted the rhomium charge and he had not brought a spare tube along. The only thing left to do was to feel their way back to the sled over the slippery ground, mak-

ing sure to avoid a deep crevasse to the right.

SUDDENLY they were blinded by a light. It came from the direction of their sled. For just one moment Warren and Ross thought that Nita or Palmer had turned on the most powerful rhomiums. But never before had they beheld anything so intensive. They were forced to shield their eyes to shut out the terrific glare.

Then something hot and searing swept across Warren's legs and he could not suppress a cry of pain. As he instinctively clutched the calves of his legs he saw with growing alarm that his tight fitting explorer's suit was on fire! He beat out the flames, although his palms were scorched and he leaped back, shouting a warning to Ross.

Then they heard voices; one was high pitched and grating. He could not mistake it. It was the voice of Gurra! It was his light they had seen in the distance when they had approached the site and he and his men had evidently been hiding in ambush until they thought it safe to attack.

Above the din Warren heard Nita screaming his name. The two men were confused by the suddenness of the thing, but they rushed forward savagely, to be met by the hot, searing flame. They dropped to the ground with a strangled cry, but the flame followed them relentlessly and burned the hair and skin on their scalps. By now they were half frantic with rage and pain. They ran desperately to escape the blinding light and the hot flame, but it followed them pitilessly.

Vague, disjointed thoughts flashed into Warren's mind. Gurra would play with them, torture them in the sight of Nita, and when he tired of his devilish game he would merely focus the flame to a knife edge and sever their heads

from their bodies. And Nita . . . ? What would become of her?

IN their frenzy the two men raced madly in ever-widening circles. Far to the right they collided violently. Their bodies sprawled on the ground and the force of the impetus rolled them over and over again down a steep incline. Although almost senseless with pain, Warren realized that he was being propelled towards the edge of the crevasse. But he did nothing to stop himself. It would be far better to be dashed to pieces at the bottom of a mile-deep crevasse than to be roasted ignominiously by the evil Gurra. He lost consciousness just as Ross' rolling body struck him and carried him over the edge.

CHAPTER VII

WHEN he opened his eyes he felt Ross bathing a deep cut on the top of his scalp—bathing it with warm water! As his eyes became more accustomed to the dim yellow light he realized several things—first, that Ross and he were both miraculously alive, and second, that the ground was free of ice and warm and soft. And he was able to breathe, although with some difficulty, without his helmet!

"OH, what a head! It feels as if an atomic disintegrator was working in there. Let me up . . . "

And as he tried to rise Ross gently but firmly pushed him down. Then for the first time he saw that his right arm was heavily bandaged and secured in a sling.

"You just stay right where you are. I had trouble enough to stop the flow of blood from that ugly gash in your scalp without applying a tourniquet to your neck. Now I don't want to go through the agony of it again. And

watch that right arm of yours. It was yanked from the shoulder socket, but I guess I set it properly. Those three years in pre-medical school did me some good after all," he laughed.

"What makes the ground so warm here? All the ice has been melted," Warren puzzled after he had resigned himself to remain in a horizontal position.

"Hot springs," Ross explained, "apparently caused by the percolations of water through hot volcanic substances. You were saying some time ago that during the period the earth was inhabited this region was never suspected of being volcanic, but great changes must have been wrought in the earth's* centrosphere since that time. And we are now deep below the surface of the earth. Look up there."

THIS was the very thing Warren had been doing. Lying flat on his back he could not very well have avoided it. But now he concentrated his gaze on the canyon of ice that reached above him on both sides like the letter V, with him at the nadir or point or edge. While he could see that it was possible to roll or slide down the sides of the crevasse and through a miracle remain alive, not a host of miracles would enable them ever to climb out of there without some aid.

"It's a mile high if it's a foot. And me here with a dislocated arm," he groaned a little as he tried to move the injured member.

It must have been late in the afternoon, judging by the deep shadows at the bottom of the crevasse before Ross would permit Warren to rise and walk around. Ross himself had been painfully bruised and cut, but his wounds were superficial and did not incapacitate him. Food

*The centrosphere is the interior of the earth from the lower or inner limit of the crust to the centre of the globe.

was a problem. Not a bite had either of the men eaten since noon the day before. Fortunately they found water, but it had a pungent odor and tasted disagreeably of sulphurous acid.** It was evident that they must try to find a way out of the crevasse at once. The longer they waited the less likely would they be able to withstand the hardships of a climb, if their search revealed a break in the smoothness of the sides of their prison walls.

It was a relatively simple matter to decide in which direction to travel. The bottom of the gorge was not more than ten feet wide; the canyon stretched away in one direction for about a half mile, then it made a bend, beyond which the two men could not see. In the other direction the canyon terminated not more than two hundred yards from where they were; here the ice rose sheer like a huge dam. The soft, spongy ground made it difficult walking, as the men would sink ankle-deep into the swampy mud. They had to pick their way cautiously around fumaroles,*** which they found in great abundance as they progressed. After a short time they were compelled to replace their helmets, as breathing the rarefied air became painful to their overburdened lungs.

AS Warren trudged along his thoughts were on Nita. More than likely she was now on board of Gurra's ship bound for Saturn. If he could only get out of this—but what would he do then? The cunning Plutonian had undoubtedly destroyed his sled, and the "Earthbound" was six thousand miles away, with no means of communicating with it. Wass Dorn

** Not to be confused with sulphuric acid. The formula of sulphurous acid is H_2SO_3 , that of sulphuric acid, H_2SO_4 .

*** If condensable vapors issue from the ground in abundance so as to give the appearance of smoke, the places where it occurs are called fumaroles.

would undoubtedly begin to search for them after losing communiograph contact with the sled, but, even if he did manage to reach the plateau above, how in the world was he to know that Warren and Ross were stranded a mile below in the crevasse? It appeared very much as if a descendant of Gordon Bancroft, after thousands of years, had returned permanently to his ancestral home-site.

The deep shadows became darker, the ribbon of grey sky above was no longer clearly defined. How far they had traveled over the marshy ground was difficult to estimate with any accuracy, as they were forced to stop innumerable times when Warren's head made him reel dizzily until he had to lie down to ease the pain. The character of the walls had not changed; in fact, if anything, they were more sheer, offering not the slightest hand- or foothold. Even if they possessed mountain climbing equipment, it would have been impossible to scale those precipitous walls.

Exhausted, hungry and suffering from the pain of their wounds, the two lay down on the soft ground and slept fitfully through the night. In the morning, somewhat refreshed by a bath in a warm spring, but with the pangs of hunger gnawing at their stomachs, they took up the journey again.

Ross was walking ahead, peering off into the distance while Warren was scrutinizing the walls, trying like a pygmy to find a defect in the armor of a giant. Suddenly Ross stopped and pointed excitedly ahead.

"WARREN, Warren, look over there," he cried in a hushed voice, "see those white things moving? No, they are not blocks of ice. They must be living creatures—either that or it's my eyes."

"No, there is something moving be-

yond doubt. I see it, too," Warren cleared away Ross' doubts, "and they are coming towards us!"

This was indeed true. The obscure white shapes were becoming more clearly defined now as they assumed the unmistakable outlines of living creatures. They had white fur, and the two men were amazed to see that they were walking upright on two hind legs! There was no thought of retreat on the part of Warren and Ross; something seemed to tell them that there was nothing to fear.

As the creatures came closer they appeared for all the world like lean-bodied polar bears walking on their hind legs. Their bodies and legs were shaggy with white fur; their torsos were slim except for the immense swelling chests. But here the resemblance to animals ended. Warren and Ross looked sharply at the creatures' heads and faces and drew back in astonishment. Those faces, covered as they were by closely matted white hair, were undeniably human!

"BEAR-MEN!" ejaculated Warren. "Descendants of those inhabitants of earth who could not flee to other worlds. Ross, it is unbelievable; am I right or has my mind been affected by that laceration on my head?"

"They are human, and what is more they wish to speak to us. Their voices sound quite natural; just listen," Ross said, fascinated by the sight.

A hundred yards away the band of ten Bear-Men were gesticulating and talking excitedly among themselves, occasionally pointing towards the two strange creatures. By listening carefully Warren and Ross were able to distinguish some sounds that had a familiar ring to them, but the distance was still too great to make them intelligible. They had not long to wait, however, before

the strange, white creatures reached them.

One of them stepped forth and advanced. "Hullo!" he shouted in a deep voice.

WARREN waved his hand and responded in English with a "How are you?"

At first the Bear-Men, in spite of their ruggedness and gigantic size as compared with their slim descendants from common ancestors, were shy and non-committal. They looked at the two strange creatures timidly, then, more boldened, they felt their garments and shoes. Warren and Ross had lost most of their instruments, including the rhodium illuminators and blast guns, so had but little to show of the scientific and mechanical marvels of an advanced civilization. As it was, the two were more concerned with the all-important consideration of getting some food into their stomachs than in trying to impress these primitive creatures with their superior attainments.

Warren asked for food and at the same time indicated by gestures that he wanted something to put into his mouth and chew. Although they had some difficulty in understanding him, they answered in a dialect which followed the obsolete English language that was spoken in this region during the period when the earth was in her full glory of civilization. The descendants of earth-men who had accompanied Warren on his perilous journey were all able to speak the English language to some extent.

It was a source of pride to them to perpetuate the mother tongue from one generation to the next, in spite of the persecution they had suffered because of it on the foreign planets. While many words had been lost or modified beyond recognition and the dialect was some-

what altered, yet it would have been perfectly possible for an American of the twentieth century to carry on an intelligible conversation with a descendant of an earthman living on Saturn. So it was in the case of Warren and Ross and the Bear-Men; they soon understood one another.

The leader of the Bear-Men, he who called himself by the earth-name of Drew Harv, questioned Warren and Ross, and the two men briefly related their story. The white-haired creatures listened with child-like expressions to this tale of strange lands and marvelous machines. They were astonished to hear what had happened up on the plateau, whether because of the extreme cold and rare atmosphere the Bear-Men had never been able to ascend. They drew aside and whispered among themselves. Then Harv looked suspiciously at Warren.

"You say that you are descendants of men of this world? True, you are white and your form is not unlike ours, except that you conceal your bodies in strange rustling stuff." He pointed to their garments. "Are any people in the land where you come from black in color, with ugly faces, short of arm and have they long, sharp talons for fingers?" he asked abruptly.

The two men were startled.

"Can he mean that he has actually seen Plutonians?" Ross whispered.

WARREN shook his head in a puzzled manner.

"Such people as you describe are from the distant outer planets of this solar system, called Pluto. Where have you seen such men? It was Warren's turn now to ask questions. It was barely possible that these people might have seen Gurra and his men up on the plateau.

But Drew Harv did not choose to

offer any further explanations. Instead he motioned to his men, who gripped Warren and Ross by the arm and directed them straight ahead. They trudged along in silence, both men occupied in puzzling out this new state of affairs while their captors walked stolidly behind. Warren and Ross could hardly credit their senses—to think that after these thousands of years during which time the earth was supposed to have been uninhabited, they had now dropped right in among the remnants of a past, great race of people. The thing was incredible, yet it was true.

Although they felt no concern about their immediate fate among the Bear-Men, the sudden suspicion displayed by Drew Harv did not augur well for their future. Did he by any chance link them with the race of Plutonians against whom he seemed to have an instinctive hatred? The description he had given of this black race was too accurate to be regarded as a chance query.

CHAPTER VIII

BEFORE long they reached a break in the sheer wall of the canyon. It was a dark hole hollowed out like the opening to an underground cavern. Warren and Ross were pushed through this narrow entrance between two pillars of jagged rocks and were led along a pitch black corridor where the stench of decaying organisms came unpleasantly to their nostrils. In the darkness the two collided against the sides of the tunnel many times, and each time Warren hit his bandaged arm against some jutting stone, he could not suppress a low groan.

After stumbling through the passage for perhaps a hundred feet, the smell of decaying vegetation was replaced by the even more offensive pungent and suffocating odor of burning sulphur.

Here the gloom was broken by a smoky greenish flame directly ahead of them. Following the light they entered a chamber hollowed out of hard rock, some fifty feet in diameter, with ceilings lost in the dim haze of smoke above. At the far side, in what appeared to be a huge open fireplace, they discovered the source of the greenish illumination. A fire, fed by subterranean chemicals, was burning with a low flame and a great deal of smoke. It served, however, to take the dampness out of the air of the cave.

Rough stone benches and tables constituted the only furniture, while for decorations the walls were lined with iron tipped spears and swords of crude forgings. It was evident that these people had preserved the use of metals, although their products were pitiful, considering the high state of scientific progress reached by their forefathers thousands of years ago. It was a case of gradual decadence of a past civilization rather than the primitive foreshadowing of a new one, Warren thought sadly.

DREW HARV and his men were courteous enough as they invited Warren and Ross to sit down at a table. Copper platters heaped high with food were laid before the famished men, and they voraciously devoured every bit without questioning it, until their enormous appetites had been satisfied. One dish was an excellent broiled vegetable that they identified as a strange variety of mushroom, while the other, in contrast, consisted of fish which was almost tasteless. Their hosts answered their puzzled query regarding the source of the foods. The fish were chopped out of the solid ice at the bottom of what had once been lakes and rivers, where they had been preserved in cold storage since the waters of the earth had frozen

solid. The mushrooms were cultivated in the caverns; the Bear-Men had achieved some wonderful results with this fungus through cross-breeding, and some varieties grew to the enormous height of six feet. It was their staple diet, as bread was at one time among their ancestors, and contained all the essential vitamins.

Feeling much refreshed, Warren continued his conversation with Drew Harv, telling him of his hopes of finding the site of Gordon Bancroft's laboratory. The Bear-Man was interested. He plied Warren with numerous intelligent questions, finally revealing the fact that the name and deeds of Warren's illustrious ancestor, dimmed by time, had been handed down through the generations as a legend. He was considered an heroic figure, ranking with such names as Edison, Marconi and Einstein.

Finally Warren brought the conversation around to the subject nearest to his heart.

"If you will give us aid in excavating in the region of Gordon's laboratory I am sure that we will find something that will be of great value to your people in reconstructing the civilization of the earth," and Warren, noting the crafty look on the Bear-Man's face, added significantly, "and of increasing your own power."

"It might be arranged," Drew Harv admitted with feigned uncertainty, "but first I must discuss it with the Three Ancients who are the rulers of the Dwellers of the Caves. You will be taken to your quarters, where you are to stay until I send for you." And in the event they harbored any thoughts of flight, he suffixed his statement by a direct warning against any rash attempts in that direction.

"I have a hunch that old Goat Face will do his best to help us in our search," Ross whispered when they had

been taken to a tiny hole-in-the-wall cavern where they huddled around the warmth of slowly oozing subterranean vapor.

"It seems that the desire of man for power has not lessened, even though his civilization crumbled back almost to the stone age," Warren philosophized. "Ross, I can't help thinking about Nita. I try my best to hold myself together; but this inaction is just wearing my nerves to a frazzle. If we don't get out of here and up to the top of this hellish hole soon, I'll go out of my mind," he said despairingly.

Ross tried his best to comfort him, but neither man could lift the burden of uncertainty from his heart. It seemed extremely unlikely that they would ever see their loved ones again. Even though they were brought back to Saturn it would be as fugitives and criminals, given a short, cursory trial and then sent to the horrible Chamber of Purple Vapor. Better, they thought, to die here on earth than to return to ignominy and torture.

SLEEP brought a healing influence to their distraught minds, for when they awoke it was with rekindled hope that they contemplated the future. Their bodies had been refreshed by food and rest and they were ready to take a new grip on their problems. So it was with considerable impatience that they awaited some word from Drew Harv regarding the decision of the Three Ancients under whose patriarchate the Bear-Men lived.

But it was a long wait. All that day no one came near them except an old serving woman, who silently brought food and water and as silently withdrew, answering no questions, not even indicating that she heard them.

"I don't trust that man, Harv," Warren muttered impatiently, stamping up

and down in the narrow confines of his cell-like cave.

Another day passed without a word, as did another night. They kept track of time by means of Warren's universal chronograph that had fortunately remained unbroken. Then, quite ceremoniously, a tall, shaggy Bear-Man came into their cave and silently beckoned them to follow. They were led back to the large chamber, where they found Drew Harv waiting for them.

"There are good tidings for you, sirs." He was unusually polite. "The Three Ancients in their wisdom have approved your venture. You are to have all the aid you need; we are at your service."

IMMEDIATELY upon receiving this promise of help, Warren and Ross began to make preparations for the stupendous excavation work that would undoubtedly have to be done to reach the strata of earth beneath the ice cap where they estimated the ruins would be. The problem of reaching the top of the plateau with the necessary equipment was relatively simple they found out, as a tunnel ran from the caverns to the surface above. But there was one insurmountable obstacle in their way. The denser atmosphere in the deep crevasse had sufficient oxygen to support life, while a mile above it would be impossible for the Bear-Men, even with their enormous lung capacity, to live for very long. For this very reason the Dwellers of the Caves had found it impossible to venture to the regions above. There were two possible solutions to this problem: one was to equip their men with masks, a plan abandoned almost before it was conceived, as they lacked the material from which to construct them, and the other was to perform the work of excavating without any outside help, a seemingly impossible

task. For a long time they were perplexed, but suddenly Ross Griffin slapped his startled friend on the back, so heartily that Warren winced with pain.

"It's the easiest thing in the world! You and I can do it alone. How? By applying the cunning chemistry of the Bear-Men. They can help us after all.

"That blue crystal that they saturate with water to use as fuel for cooking their food is a radio-active compound of their own that has tremendous possibilities. Yesterday, while you were taking a nap, they took me down below to a deep underground cave, where I saw their chemists compounding it from minerals they mine in this location. They demonstrated a concentrated mixture that burned with such an intensive flame that it melted a block of granite. Just think, with that chemical we can drill a shaft right down through the solid ice and soil and even rock until we reach the required depth. And the quantity needed is so small that the two of us can carry it without difficulty in one trip."

Warren recalled with what curiosity they had first examined this compound, little dreaming that it was actually manufactured by this race which was so backward in other things. But in the worries that had beset him, the idea that this substance might be of value in their work never came to him. Wasting no time, they made their wants known to Harv, who immediately issued orders to his chemists to prepare a large quantity of the concentrated crystals.

CHAPTER IX

WHILE Warren fretted impatiently at the delay, the skilled chemists toiled unceasingly day and night over giant retorts until they

had crystallized about one hundred pounds of Radonite, as the substance was called. Then with the precious crystals carefully protected against moisture in bags of fish skin, Warren and Ross were ready to leave the cave through the passageway. Equipped with copper shovels and picks, bags of Radonite and the neutralizing agent Urvion, they were heavily burdened and could move but slowly.

Warren led the way through the tunnel, the Dwellers of the Caves deciding that it was safer to remain behind. As they rested after passing up the first sharp incline, Warren turned to Ross and held his fingers to his lips.

"Listen, do you hear that? It sounds just like Nita's voice!"

Low musical tones, muffled by the solid rock, came to them as they placed their ears against the wall.

"I could swear that it was hers," Ross whispered, "but that is impossible. It must have been one of the native women; you know how they can vary the pitch of their voices."

They listened intently for another minute, but were rewarded by nothing but silence. After all, Warren reflected bitterly, Nita would be back on Saturn by now and probably unhappily married to the monster Gurra. Thinking of this did not put him into a very cheerful frame of mind; all his moodiness returned and he answered Ross in short monosyllables.

The sharp upward grade eased to a more gradual rise, for which neither of the toiling men were sorry. In order to gain the top of the plateau, which they estimated to be one mile above the bottom of the crevasse, it was necessary to travel more than three times that distance in the darkness and over a rough, boulder-strewn floor. The grey, irregular patch ahead, proclaiming the upper end of the tunnel, was a welcome sight

to the weary, almost incapacitated men.

The region where they emerged into the fitful daylight was unfamiliar to them. In all likelihood it was a considerable distance from the scene of their encounter with the Plutonians, as neither the cabins nor the sled was anywhere in sight. The two dropped their heavy loads and after a brief breathing spell started towards where they judged the cabins to be. Fortunately they guessed right the first time, for after about five miles covered at a fast rate over the icy terrain, they could make out the flash of light on the Zistite metal huts.

Their expectations were replaced by disappointment when they found the sled gone, the hard ice showing faint tracks that were lost a short distance away. The micro-camera and the recording analyzer were exactly where they had dropped them when they were attacked. They hid these instruments in one of the cabins for future use.

"The devils, they have taken the sled with them." Warren voiced his bitter disappointment. "Now we have no possible means of communicating with the "Earthbound" or of ever hoping to reach her. To make the six thousand miles on foot would require almost a year. No, the only thing we have to look forward to is that Wass Dorn has already decided to search for us. Even then he must hurry, for God knows at what moment the police ship will swoop down upon us."

"We can at least get our bearings from here, Warren. It's a lucky thing that we took note of our position when we stopped here in the sled. Now we know the general direction and the distance."

"Yes," the other man answered, looking off through the haze to where a huge peak of ice rose above the ridge of white mountains." According to the

map the site of Gordon Bancroft's laboratory is over there to the left of that peak, and it is exactly twelve and a half miles from here. By keeping track of our steps we will be able to measure the distance with sufficient accuracy until we reach some of the other landmarks that Gordon mentioned in his notes. But I wouldn't place too much reliance on finding any of them after all these years."

They returned to the mouth of the tunnel to pick up the Radionite and their tools, after which they trudged determinedly towards the slender spire of ice. The shadows deepened and the grey light gave way to darkness, whereupon Warren called a halt. The two ate a handful of cold mushroom cubes, rolled themselves in blankets made of fish skin stuffed with asbestos wool and slept, without being rested, on the hard, icy surface.

As soon as the light was sufficient for them to discern their distant landmark they started and before noon they reached the site. The flat ice-covered landscape offered no clue; to sink a shaft at random would be nothing short of a gamble, for the ruins of the laboratory buildings covered but a small area, and there were many miles of unmarked country in which to locate this almost microscopic thing.

"LET me try to remember the description that Gordon gave in his diary." Warren sat down and thought deeply. "He mentioned a small lake in the rear of his main laboratory building. In fact he thought it was good sport in his moments of relaxation to drop a line from the window and fish for what he called 'suckers.'"

"How is that going to help us now with every drop of water frozen as solid as rock?" Ross asked.

"A lake would leave a depression in

the surface of the ice when the earth froze over," Warren explained, "and if there was no upheaval in the crust of the soil, as was the case back there," he pointed in the direction of the explorers' huts, "then we should find the lake without much trouble."

The ice was fairly level in this region and any depression in its surface could be detected readily. The men separated and, walking in opposite directions, began to search carefully.

"Warren, Warren, here it is!" Ross shouted from the distance.

Warren hurried to join him and checked his findings. There in the otherwise smooth surface of the ice was a hollow about two hundred feet long that might at one time have been a small lake.

"Yes, this looks like it, Ross. We'll sink test shafts at both ends unless we are lucky enough to strike it the first shot," and, wasting no more time on words, Warren began measuring out a quantity of Radonite that he estimated was sufficient to melt through a twenty-five-foot layer of ice and provide a shaft six feet in diameter.

From that point they would be compelled to sink the shaft in stages of five feet at a time to avoid going too deep. He inscribed a circle in a likely looking spot at one end of the lake and sprinkled a small quantity of the neutralizing chemical Urvion around the circumference to confine the action. Then, covering the area of the circle lightly with the radio-active* crystals, the men stepped back hurriedly as the Radonite began to glow red, then white hot, con-

*Radonite, as compounded by the Bear-Men, contained a certain amount of radium. The other substances served to speed up the disintegration of radium so that its atoms were transformed into heat energy. One gram of radium evolves about one hundred and twenty calories of heat an hour, which is more than enough to raise its own weight of water from the freezing point to the boiling point. Radium also decomposes water. A gram (about $1/28$ of an ounce) of radium emanation has the same content of energy as two tons of the best coal burned in pure oxygen.—Energy and Matter, by Charles B. Dawson, The University Press, N. Y.

verting the solid ice into water which instantly turned into steam. As the action became more violent and the substance burned deeper into the ice, a huge geyser of live steam and hot water shot up with a roar in a column six feet in diameter to the height of five hundred feet. The two archeologists gazed at this man-made phenomenon with awe.

"**I** HOPE that the action stops soon."

Warren's voice sounded dubious. "Otherwise it might continue right on through the laboratory and disintegrate the safe and the documents inside."

"Perhaps we should have sunk a test well first," Ross mused remorsefully. Then, realizing how ridiculous his suggestion sounded at this time, he smiled a bit wanly. "I only hope we are at the wrong end of the lake; then we can be more careful the next time."

The concern felt by the men was not unfounded. They were experimenting for the first time with a powerful chemical action they had no way of gauging or controlling. True, the Bear-Men had given them the results of their experiments, but these were far from reliable, as they had never attempted anything as stupendous as this.

That their fears were fully justified soon became evident. Ross cautiously crept near the column of live steam and boiling water and threw a stone over the brink of the shaft. Down, down it went for what seemed to be an appalling depth while he counted the seconds on the chronograph until it struck bottom. A hurried estimate revealed that the well was already more than a hundred and fifty feet deep, and still the action of the Radonite continued apparently unabated!

By this time the geyser had become a volcano. It was erupting stones, rock fragments and hot sand with mighty

explosions that could be heard for miles. This thing was getting beyond control and was becoming extremely dangerous.

"Something went wrong with our experiment," Warren shouted above the noise of the explosions and the hissing of steam. "We'll have to stop it—right now. I'll try pouring Urvion on it."

And shaking off the restraining hand of his friend he fought his way through the hot gases and steam and sand to the very brink of the volcano. If it were not for his fireproof garments and helmet he would have been overcome by the fumes and burned alive. But even as it was, the terrific heat had penetrated this barrier and his body and head felt like so much boiled meat. He hastily emptied the contents of a bag of Urvion into the raging inferno and, summoning his last ounce of strength, leaped back and clear of the crater just as a terrific explosion rocked the very foundations of the universe. A large piece of rock struck the back of his head and, just before he lapsed into unconsciousness, he saw a fissure of ice opening, like huge jaws, as if to swallow this puny mortal who had dared to disturb the slumber of Nature after these thousands of years.

ROSS GRIFFIN stood for a moment spellbound by the suddenness of this cataclysm. Then he sprang forward and seizing the inert form of his friend he dragged him over the slushy, lava-pitted ice just in time to save him from plunging into that gaping hell-hole. From the safety of distance he watched, fascinated by the awe-inspiring sight. For a length of at least three hundred feet the sheet of ice had been burst asunder and the unceasing action of the Radonite converted the thousands of tons of ice and rock into hissing steam and molten lava which was spewed

from the fissure and thrown high into the air.

For perhaps fifteen minutes this miniature volcano continued its eruption, then without warning it ceased. The violent steaming died down to a few wisps of white vapor; the hot lava cooled rapidly, then everything became so still that the contrast was appalling. Warren recovered from the effects of the blow and the heat exhaustion in time to see the tail-end of the strange phenomenon.

"Ross, I'm afraid to go over and look. I'm afraid that everything beneath that blanket of ice is destroyed. I should have had more sense, knowing that this was a new experiment.

Warren, despite his courage and determination, had since the disappearance of Nita become a creature of moods.

"Old man," Ross looked at his friend tenderly, "you'll have to pull yourself out of that. Here we are on the brink of success," and, pointing into the chasm, he added with a smile, "I mean

literally as well as figuratively, and you take such a down-hearted view of things. Why, man, that eruption was the best thing that could have happened; it exposed the surface of the ground under the ice and all we have to do is jump down there, open the door of the safe and remove the papers."

The other man's enthusiasm had some effect upon Warren, for he shook off his lethargy and strode over to the fissure. Looking down into the abyss, he beheld the results of the mighty force of Radonite. For a distance of three hundred feet a strip of ice fifty feet wide had disappeared entirely. And to his joy he saw blocks of stone and bricks made unmistakably by the hand of man, and which proved conclusively that they were gazing at the ruins of a building erected by early earthmen. Contrary to their expectations, the action of the Radonite had not removed more than a few feet of topsoil and rock, just enough, in fact, to make it unnecessary to do very much excavating.

END OF PART I

"I NEVER HAD SUCH A SMOOTH SHAVE"

says PEPPER MARTIN praising Probak

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Interference

Mr. Sheridan is a new author as far as our readers are concerned. We are sure that his work will meet with high approval. A strange attack, at least strange in its methods, is adopted by the Orientals who are on the verge of conquering America. Their work depends on a giant power station, and we are told of how the heroes of the story cope with the apparently all-powerful enemy.

By MAX C. SHERIDAN

THE little group had tired of playing bridge, and unanimously decided to spite the sweltering heat of a torrid July day by a dip in the white tile pool. They separated and went their respective ways to dress for the swim.

Joan and Arthur Brooks, Eva and Phil Doran, had all completed their work at Harvard the preceding June and were gathered at the Brooks ancestral home for several companionable weeks. Joan and Arthur were brother and sister, as were Eva and Phil. The four had formed quite a noted group in campus activities; Joan and Phil, Eva and Arthur had paired off as naturally and suitably as Jack and Jill, and the brothers and sisters had formed such a compatible clique that it had become a campus byword.

Phil Doran had been active in the athletic affairs of Harvard; tall, lithe and bronzed, he was the more quiet and reticent of the four. On the other hand, Arthur Brooks was shorter, a trifle inclined to stoutness, and had a descriptive phrase or pun for every incident. The two girls were both lively and vivacious—ready for any adventure or suggestion. Joan was a brunette, Eva a blonde. The four were certainly individual types, but their contrasting

differences seemed only to strengthen the ties which bound them in harmonious friendship.

The group reassembled on the spotless tile of the inclosed pool, and drew lots to determine the first victim whose duty it was to dive in and test the temperature of the clear depths. Arthur won, or rather lost, and with sour grimaces ascended the ten-foot tower and teetered precariously on the end of the board.

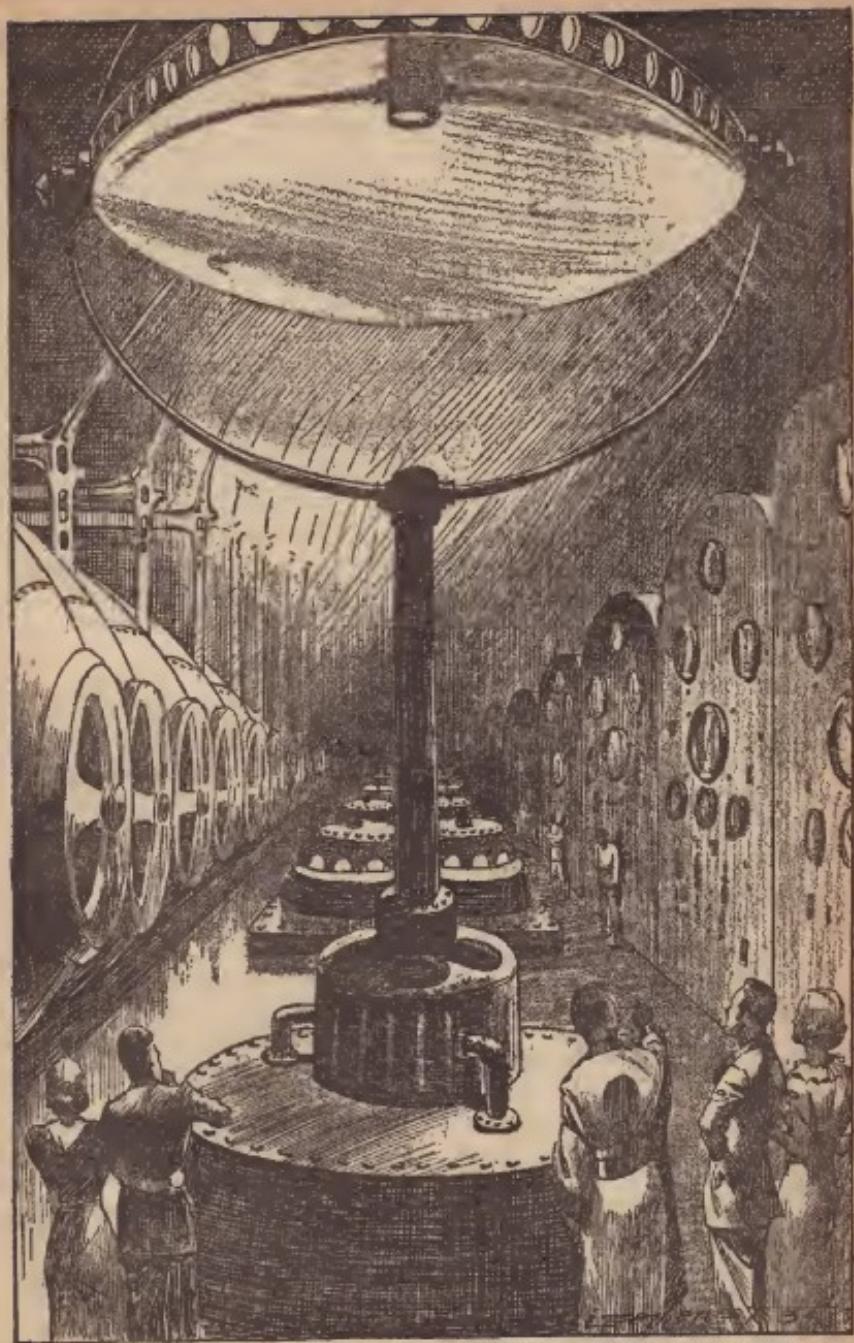
"Well, go ahead, Adonis; let's see you execute a cut-away one and a half," taunted Joan.

"He'll execute it all right," laughed Eva. "He'll murder it in cold blood."

Pretending fury at the disparaging remarks, Arthur made his approach in the accepted style, struck the end of the board, and rose to arch into a really beautiful swan dive.

There was an audible "Oof" as he hit the water. The velvety surface yielded under his weight, then rebounded as if activated by springs, and threw the astonished Arthur high in the air, to land, sprawling and breathless, on the bank of the pool.

Gasps of consternation and dismay broke from the lips of the three onlookers before they could recover sufficiently to assist the would-be diver to his feet.



It seemed to consist of an enormous searchlight with its reflector about ten feet in diameter, and which was mounted on a vertical shaft one foot through.

"What on earth happened, Arthur? Are you hurt? What did you do?" gasped Eva, all in a breath.

"He jumps like a rainbow trout," was an irrelevant comment from the taciturn Phil.

"Shut up, Phil, it's no joking matter," his sister scolded.

By this time Arthur had recovered his breath sufficiently to haltingly describe his sensations. "I don't know just what happened—I dove, and when I hit the water it seemed just like landing in an acrobat's net—then the blame stuff threw me up in the air—and that's all I know about it."

The three gazed at each other questioningly at Arthur's inconceivable description until Eva galvanized them into activity by the sensible suggestion that they see for themselves. The group advanced cautiously to the bank from which they had so precipitously retreated, and Phil leaned over the edge presumably to dip his hand in the clear water. His fingers touched the surface and he drew back in amazement.

"THE confounded stuff's just like rubber!" he ejaculated.

The others had by this time made the test for themselves, and found the surface of the water yielded but would not allow immersion of the hand. When pressure was applied, it gave, then rebounded, just as Phil said, like India rubber.

"What do you suppose has happened?" asked Joan.

"God only knows; do you suppose some of our friends have somehow or other played a trick on us?" asked Eva.

"How on earth could they do that? What could they possibly do to the water to make it act like that?" scoffed Joan.

"Oh, I don't know. But if you can offer a better explanation, let's hear it,"

retorted Eva, perhaps herself dissatisfied.

Arthur interposed: "Come, come, children, to settle your puerile bickering, Professor Soandwhoosit will proceed to make a thorough scientific investigation of this remarkable phenomenon." With these words he confidently stepped out on the surface of the water.

The others gasped, as they watched the smiling Arthur stepping springily on the surface of the liquid. He stopped about the middle of the pool, and called to the three on the bank. "Come on in, the water's fine! Talk about your rubber ice, this takes the cake."

Phil immediately joined him, and after a little coaxing, the two girls followed. The four of them walking calmly about on the surface of the liquid certainly made as strange a sight as has ever been seen. After a few minutes, the group paused to consider the strange surface on which they were standing.

There came a moment of silence, broken by a terrified shriek; then the four, splashing and choking, made their way to the banks of the pool and climbed out, dripping wet. Their strange floor had suddenly dissolved beneath them, giving them an unexpected dip in the cool water.

While the unfortunate four were changing clothes and recovering from their unusual experience, the whole world was busy discussing the phenomenon of the "hard water."

Ships in mid-ocean had suddenly been lifted high and dry on the surface of the salty deep, propellers churning the air frantically, while amazed officers and frightened passengers wondered what kind of deep sea monster had risen under them. Bathers seeking escape from the July sun had suddenly found themselves floundering ludicrously on a firm surface. Housewives had found the household bean resting majestically

on the congealed surface of its liquid bath, and water faucets mysteriously dry. Inoffensive citizens quenching their thirst had found themselves swallowing a lumpy mass. For the duration of the phenomenon, the entire globe was in a quandary, everyone at a loss to explain the sudden rebellious transformation of the most familiar matter. Then, as suddenly as it had appeared, the mysterious symptom vanished, leaving the plentiful dihydrogen oxide as wet and familiar as Adam had found it. Subsequent notes on the phenomenon revealed the fact that it had been universal, and that it lasted exactly two hours. Of course this information was of no use whatsoever, but the investigators had in some way to justify their existence.

IN 1954, ten years before this remarkable aquatic phenomenon, came the epoch of the brief but disastrous Second World War. By the treaty of San Francisco, Japan and her allies: India, China, and Russia had been deprived of their navies. According to the treaty, these countries were to have only a very limited number of merchant marine to carry on their necessary commerce. Not a single destroyer, not a super-dreadnought; not a single submarine or aircraft carrier had they been allowed to keep. America, by reason of her enormous losses, had appropriated every Japanese and allied ship and had incorporated them in her own powerful navy. Now, the United States, abetted by her acquisitions, certainly had the most powerful means of oceanic offense and defense in the world. She boasted that never again need she fear attack from any or all of the world.

Of course Japan and her allies had protested vehemently at these drastic terms, but their defeat had been so com-

plete they were obliged to accede to the conditions. Japan, however, made quite a fuss about giving up her magnificent navy, and pleaded that they might be converted into merchant marine. America, fearing treachery, refused her pleas, and further incurred the resentment of the Orientals by commanding curtailment of airplane production, and the reduction of the existing fleet. Japan, after entering a formal protest against the severity of the terms, said nothing more, and apparently once again peace reigned supreme over the entire globe.

Recently there had been reports from various secret agents in the East that trouble was brewing among the oriental nations, but nothing indicative of open hostility had occurred. This news was soon forgotten in the excitement of the strange phenomenon of the "hard water."

Soon, even this unheard-of incident became an inconsequential thing of the past, and once more the humdrum existence of daily life was the chief concern of hurrying, bustling mortals. The four friends, of course, shared in the popular excitement and the gradual return to normal. They dallied with the theories advanced by prominent scientists to account for the phenomenon, and discussed their own peculiar experiences. Soon, however, they returned to their games of bridge and their golf, their dances and social doings, with only an occasional word of the strange swimming party.

Meanwhile, Cupid was busily engaged in his amorous duties, and apparently was making a great success. Proof of his diligence was announced one day in the society columns of "The Evening Tribune." The public was informed that Miss Joan Brooks would soon become Mrs. Philip Doran, and Miss Eva Doran would take the name of Mrs. Arthur Brooks, at a double wedding.

The two couples would then leave on their honeymoon, aboard the Brooks' yacht, the "*Corella*," for a three months' voyage in southern waters. They intended to touch various points of interest including the famous Galapagos Islands.

On August thirtieth, the reverend gentleman of St. John's Church performed his disastrous duties, and amid considerable rice, and several pairs of "nugatory brogans," the two young couples hastened to board the "*Corella*."

HERE was a tremendous confusion and hustling and bustling as the two hundred and fifty foot yacht backed out from her berth into the open waters and turned to her course. Gongs sounded, engines hummed, then relapsed into ominous silence. Finally the "*Corella*" recovered from her temporary relapses, and after the last tug had left her, started under her own power for more southern parts. The newly married four stood arm in arm at the rail enjoying their last glimpse of the U. S. for several months to come, and waving goodbyes to the friends who had come to see them off.

That evening, they danced on the hurricane deck, and as is the eternal habit of honeymooners, commented on the brilliancy of the stars and the gorgeousness of the moon, while apparently looking at nothing but each other.

By the time the "*Corella*" had braved the maze of Panama's intricate locks and had emerged triumphantly into the great Pacific, the newly-weds were beginning to notice their surroundings. When they caught their first sight of the famous Galapagos, they were intensely interested; they had already hurriedly collected all the data available on these islands of Nature. They found that the Inca Chief, "Tupac Yupanqui" braved the deep, blue waters, long be-

fore Columbus had his first bath, and named the Galapagos, "Ninachumbi" or "Mountain of Fire." Then, they pondered, the volcanic isles must have been in action at least within historic times. They learned that Rogers was supposed to have buried rich plunder somewhere in their depths. They read the supposition that the Incas might have found their last stand here, safe from the attacks of Pizarro. They read of the few voyages and the scanty exploration of the islands, especially the most famed of all—the island "Indefatigable," whose huge center crater had never been trod by the foot of man. They read with interest, explorers' accounts of the strange fearlessness of the types of animal life which have inhabited the isles in safety and peace from time immemorial—how the animals feared neither beast nor human, and would interestingly examine the hand that fed them—truly the fearlessness of the Garden of Eden.

They were interrupted by the captain's message "Land," and hurried to get their first glimpse of the "Enchanted Isles." There, just where the blue of the sky merged with the deeper shade of bottomless waters, they saw the broad flat disc of purple haze, rising slowly to a sharply conical elevation near its center—Nature's own retreat—the Isle "Indefatigable."

They watched the tiny purple vision grow till it became a broad, slowly rising vista of low shrubs and cacti, topped by the precipitous, rugged peak which formed Indefatigable's huge center crater. Finally the "*Corella*" anchored in a little sheltered bay, and the four eagerly put off in the motor-boat for their first look at the the flora and the fearless animal life of which they had heard so much. As the boat touched the sandy shore, Arthur Brooks leaped from the bow with the taunt,

"Aha, first man in no-man's-land. Man before monkey, you know," he finished, helping his bride ashore.

"Monkey before man, you mean," corrected Eva.

"Aha, a heathen are you? Don't believe in the Bible, eh? What would your Sunday School teacher say?"

"This southern air must have affected his head," commented Phil, helping Joan ashore.

THESE absurdities disposed of, the four turned their attention to the land on which they found themselves. They had gone ashore in a little cove, at either side of which were jagged lava reefs, inclosing a softly sloping beach of white sand. Dotting the pure white of the sand were countless vari-colored shells of all kinds, forms and dimensions: cones, chitons, conches, and many others. Some hundred feet up the slope, the pure white of the beach gave way to dark and dingy protrusions of sharp lava from a charred and burned foundation, while in the distance, rising against the blurred background of the center crater, were myriads of huge cacti and clumps of low bushes. Altogether, Indefatigable was by no means a Garden of Eden. One could easily understand why no commercial ship ever ventured to linger near its bleak, inhospitable shore, and why none but buccaneers, shipwrecks, and irresponsible scientists had ever ventured to brave its razor-like lava, and its almost insurmountable piles of shifting, sliding clinkers.

Arthur interrupted their inspection: "Hey, look, there's a mermaid down the way." They followed his gaze and saw a full-grown sea lion and her cub awkwardly waddling out on the beach. With the tameness of all Galapagos animals in mind, they started toward the two with the intention of examining

them intimately. However, at the first sight of the four humans, the mother grunted a warning and command to her offspring, and the two slipped into the water and were gone.

"Come back, we won't hurt you," called Arthur after the vanished animals. "Well, now that's a funny thing. Darwin and Beebe and all of them said that the animals would let you come right up to them; that they were as curious about humans as humans are about them. I think Phil must have scared them to death with that Svengali map of his."

"More probably they tired of listening to your inane chatter," retorted Phil.

The four gazed for a moment at the azure depths which had swallowed the sea lion and her cub, then turned again to the seared and blasted landscape. They picked their way silently through the maze of cacti and barb-lanced bushes which threatened them on every hand; the drear scene was not one conducive to conversation.

"Say, folks," said Arthur, "This reminds me of a story about——"

"About the traveling salesman, I suppose," interrupted Phil.

At a scorching glance from his better half, Phil subsided, and Arthur continued—

"About a traveling salesman who was distributing farming equipment in central New Mexico. He had traveled for miles without anything more interesting than a vast expanse of sage brush and mesquite, broken only by occasional clumps of—more sage brush and mesquite. Finally he came to a dilapidated ranch-house which seemed on the verge of ultimate dissolution, with a crooked, weatherbeaten sign informing him that this was 'Pleasant Ranch.' Although he was a trifle inclined to doubt the absolute veracity of the board, it was well after dinner time, and he decided

to inquire into the possibility of getting something to eat. He was met at the door by a withered, bent, old cow-puncher, apparently in not much better shape than the ranch-house. At his inquiry, the cow puncher escorted the salesman into the "dining room," where he was introduced to a second very seedy-looking individual, who, it seemed, was the owner of the ranch. During the very frugal meal, the salesman asked the owner, how he could make a go of ranching in such a barren spot.

"Waal," said the rancher, "You see that cow puncher there?"

The salesman admitted that he did.

"Waal," continued the rancher, "He's worked fer me fer two years now, and I cain't pay him. In two more years he gits the ranch. Then I'll work fer him till I git it back."

ARTHUR'S story brought a laugh from the two girls, but Phil appeared to be listening intently to something the others had not heard. He held up a hand motioning them to silence. They stood motionless for several seconds, but heard no sound.

"I might have been mistaken," said Phil, relaxing from his tension, "But I was sure I heard a rifle-shot from somewhere ahead."

"Probably what you heard was the mainspring breaking in your upper works," scoffed Arthur.

"I'm almost sure I heard a shot," murmured Phil.

"Do you suppose anyone else could be on the island?"

"I don't know. There was no ship anchored when we came, and it's impossible for one to have arrived in time for its occupants to reach the interior before us. I must have been mistaken."

"Evidently," concluded Arthur.

The group had paused in their exploratory ramblings, and now simul-

taneously turned to view the gorgeous scene which had almost miraculously evolved in the west. The sun which had been so recently a well-defined ball of blazing heat, secure in its heavenly abode, now was poised irresolutely above the mystic depths of the unruffled waters—its flaming glory shaded and tinted to a soft rose by its veiling wisps of clouds. The soft hues of the placid sky seemed to deepen gradually to a clinging purple haze of indescribably sinister hue, which enfolded and clothed with an air of evil majesty, the huge cone of the crater Indefatigable.

If any artist could thrust off the bonds of human fallibility and bring the varied hues with the accompanying air of vague and sombre elan to rest upon the flat surface of his canvas, the whole world would rise up and claim him to be an exaggerating, effulgent fraud. Beautiful, yes, but impossible, and therefore improper and useless. Such are the rambling digressions of our nuptiary race.

The group stood spell-bound for many minutes, before they realized that the scene before them meant impending night, and the necessity that they return to the shelter of the yacht. No one dared to break the silence which meant so much to each in his interpretation of it all; and without a word they turned, and with many a backward glance, made their way slowly to the edge of the lapping waters where the dinghy waited.

Aboard the yacht, the resiliency of youth asserted itself, and the deeper feelings of the evening were displaced by a merry good humor which was accentuated by the music of the piano in the salon, and the revealing brilliance of electric lights.

After a dinner which only an American negro can cook, enjoyed with appetites which only crisp salt air and plenty of exercise can create, the group gave

over the evening to the restful enjoyment of dancing, under the brilliance of stars in a tropical sky.

The after-deck, where the select affair was under way, boasted only of low steel rails to separate them from the unfathomable black waters of the equatorial night. Soft, shaded lights threw shadows on the calm waters below, which distorted and maligned them, in their relations to the swaying figures above. The lights seemed not to dispel the darkness, but merely to mold it into something more familiar to the ken of man, leaving a still unexplored remoteness in the shadowy dusk of the deck.

UNDER the influence of the wiles of the dark, the temporary frolic was diverted to a more thoughtful mien, and soon the two couples retired to the inviting benches along the guard rail. Conversation languished in deference to the mood of the group until Arthur broke the silence in almost an apologetic tone.

"Say, folks, do you see what I see?"

"See what?" was the laconic query from Phil, who seemed almost to resent the interruption.

"That light up there above the crater. See it? Seems as though it were a reflection of a fire deep down in the crater. You don't suppose Indefatigable has come to life again, do you?"

"Don't see how. It's certain that the crater has been dead for a thousand years at least. It's hardly possible that nature would set the scene and give an eruption for our particular benefit—but—by Jove, there is a light up there; Arthur's right! Look, girls!"

The vague outline of the huge crater was dimly visible in the distance, its sectioned top in relief against a glow which reflected from the clouds above it back to the rim. The distant illumination

certainly came from within the crater, but its steady unflickering mien rather discouraged the possibility of an eruption. Rather it seemed a steady burning, perhaps of some natural-gas jet recently come to life in the bowels of the dead crater.

The group watched the faint glow with interested speculations as to its cause, until far into the night. It was with regret that they finally forsook the dusk of the deck for the necessary rest of the physically tired.

All night the eerie gleam from the distant crater cast its vague light on the encompassing rim. When the gray dawn finally began its progressive revealment of the cacti-covered shores and the endless reach of lapping waters, the light went out with the suddenness of a snuffed candle.

Bright and early in the morning, Phil, Arthur, and the two girls were on deck to see if their strange light were still in evidence. After convincing themselves that it was gone, and almost deciding that they had imagined their vision of the night before, they hurriedly gulped down their breakfast, and once more put off in the motor-boat for a continuation of their exploration.

This time they took lunches with them and started out immediately for the interior of the island. The Captain had tried to dissuade them from the trip, telling them that it was almost an impossibility to penetrate very far inland because of the extremely rough going. However, the four were determined to attempt the journey to the base of Indefatigable's crater in an effort to learn more about the strange illumination of the evening before.

THE four were in high good humor, and picked their way among the jagged lava boulders and barbed thorn bushes with a continual exchange of

pleasantries. Arthur as usual, was wise-cracking and poking sarcastic jabs at Phil.

"Why don't you pick those canal boats up when you walk?" he asked, as Phil stumbled over some of the shifting, sliding clinkers. "There's where two feet make a yard."

"You haven't much to say about beautiful proportions," retorted Phil. "With those ears of yours, you look like a loving cup from behind. If I were you, I would be very careful not to wiggle them—you might fly away."

This apt remark put an end to Arthur's friendly sarcasm for the time being, and the group slowly continued on toward the interior. There was very little of interest in the monotonous scene of cacti, lava boulders and thorn bushes; no one had much to say, of course the rugged, tiresome climb may have had something to do with that. By this time they had progressed some four miles inland, and were beginning to feel the pangs of noonday hunger. By mutual agreement they stopped and spread out their lunch on the rough cinders, sitting around the improvised meal, on odds and ends of volcanic débris. The four were seated looking down the long climb they had made, at the bottom of which lay the tiny yacht in its miniature bay.

Finally after much squirming, moving and adjusting of the makeshift chairs, the party busied themselves with the disposition of chicken sandwiches, dill pickles, cake and sundry.

There came the sound of stealthy footsteps behind them. Phil turned in time to see the leering, yellow face and the slant eyes of an Oriental, before he was grasped roughly and a towel smelling of ether held tightly over his face. Other short, stocky yellow men treated the others in a like manner before anyone had a chance to so much as move a

muscle. The struggles of the four died out under the influence of the anesthetic, and the Orientals, six in number, soon had the arms of the four manacled behind their backs. Producing automatics, they sat down, laughing and conversing among themselves in sing-song gutturals, while they waited for the awakening of the four friends.

"How are we to dispose of these, Tsi-Lo?" asked one of the group.

"Mercadon said not to harm them, and to bring them to headquarters," answered Tsi-Lo.

"Why do we go to all that trouble? Why do we not dispose of them so easily?" asked another, raising his automatic suggestively.

"Mercadon's orders," returned Tsi-Lo. "And Mercadon is to be obeyed while His Highness is gone."

"Mercadon is a soft-hearted fool," complained the other.

"Best not let him hear it. He might attempt to change your opinion."

By this time the effects of the mild anesthetic began to wear off and the four friends started to rouse from their stupor. Soon Phil sat up and looked around.

"WHAT'S up? What in the devil is the idea?" he demanded of the Orientals.

Tsi-Lo answered for them all. "No sabby," he said.

It was not long before Arthur sat up, as he saw the six short yellow men surrounding him. "Well look here," he murmured, "If it isn't the Yellow Peril himself."

"No sabby," returned Tsi-Lo.

"Who said you did?" asked Arthur. "What I want to know is—what in the devil do you mean, tying us up like this?"

"No sabby," returned the inscrutable Tsi-Lo.

"Do you suppose he does or not?" asked Arthur, turning to Phil.

"I don't know, but asking them won't get us anywhere. How are the girls?"

As if to answer his question the two girls sat up almost at the same time and looked confusedly around them. After a moment they realized the situation and Eva asked: "What in the world do you suppose they want with us?"

"Don't know," said Phil. "Perhaps they're Asiatic bandits, and are going to hold us for ransom."

Whatever their reason, the Orientals didn't see fit to enlighten their captives. After the four friends had completely recovered from their involuntary nap, they were motioned to their feet, and were silently led by their captors toward a deep gully a few hundred feet away. It was rough going, and without the aid of their hands, the four friends took some pretty bad falls. Tsi-Lo, noticing their difficulties, searched the two men for weapons, and then untied the hands of the Americans, motioning them ahead of him with his automatic in hand.

When they reached the little ravine, the four friends gasped in astonishment. There, in the bottom, stood a late model automobile, while up and down the gulch, as far as they could see, was a graded, surfaced road. Here in the middle of one of the wildest, most rugged lands in the world—an automobile, and a road! What was the meaning of it all? Phil tried to ask the silent captors, but the only answer he could get was "No sabby."

The four were motioned into the tonneau of the big car, and four of the Orientals stood on the running boards, with Tsi-Lo at the wheel and one of the others beside him in the front seat. The motor purred at a touch of the starter, and the car started smoothly forward.

"Home, James," murmured the irre-

pressible Arthur. It looked as if it might be quite some time before they were even to start in the direction of home, and Arthur's sally brought no answering smiles from the other three.

As they wound in and out along the ravine, always climbing, the four wondered at the possibility of a road and automobiles existing on Galapagos. Why had the road been built? How had it been kept secret?

Phil had a sudden inspiration. "Say, folks, this is the reason those sea lions were afraid of us. These Chinks have probably been hunting them for food. And that's why I heard that shot last night."

"That may be so," replied Eva, "But the question is—why are they here? Why has this road been built? Why the high-powered car on a supposedly uninhabitable island?"

Phil shrugged his shoulders dispairingly. "I have not the faintest idea, but it looks as if, at any rate, we are to find out something more soon."

BY this time the car had slowly climbed to the foot of the abruptly rising mountain which housed the crater Indefatigable. It was evident that no road could have been built along its precipitous sides, without it being visible plainly at a distance, and no such mar defaced the cinder-covered lava of the steep slope. Where then did the road end? If it didn't wind its way over the mountain, where did it go?

The solution was soon disclosed. Nearing the base of the hill, Tsi-Lo turned left along the smooth crest of an interrupted lava flow, and followed along the base of the mountain for some hundred yards. The road now turned abruptly to the right, and led to the dark yawning mouth of a tunnel. Switching on the headlights, Tsi-Lo drove swiftly into the black opening.

The car roared its challenge to the steep climb, and the walls of the cave echoed and reechoed, until it seemed the mountain must split apart from the commotion in its 'innards.' Almost deafened, the four friends made no attempt at conversation, and spent their time examining the passage through which they were speeding. Illumined as it was by the brilliant lights of the car, they could plainly see that it was man-made. Its walls and top were rough and jagged, and once they caught a glimpse of dynamite boxes piled in a short cross cut.

Some distance ahead, a point of light became visible, growing quickly as they sped along. Soon they emerged through the opening, and were almost blinded by the sudden glare of the sun. After their eyes had become accustomed to the light, they eagerly examined their surroundings.

They found they had penetrated to the interior of the crater, and as the automobile now came to rest, they saw that they were on a circular balcony of solid lava, some two hundred feet wide, which extended entirely around the circumference of the crater. In the middle of the crater yawned a huge hole, around which the balcony seemed miraculously suspended. Several hundred buildings of various sizes were scattered along the huge ledge. Men were coming and going busily, while from the depths of the huge center pit came the sounds of many voices and the clanging and bustle of intense activity. Huge flood-lights illuminated the pit for the benefit of the workmen, and made visible the intricate machinery it contained. Sounding even above the clamor and noise of the workmen, there was a deep roaring which seemed to come from the depths of the pit below them. At one side arose a pipe, from which a mighty volume of steam rose

into the air above them to condense and fall like mist.

Their observations were cut short as Tsi-Lo motioned them from the car. He led the way to one of the larger buildings, and stood aside to let them enter. They found themselves in a remarkably well-appointed office—soft upholstered chairs, a lounge, sideboard, and a roll-top desk. Beside the desk, a well dressed Oriental, presumably Japanese, was busy with a pile of papers. He looked up at their entrance, arose and made a sweeping bow, and said in perfect English.

LADIES and gentlemen, I am honored. Please be seated and make yourselves comfortable while I attend to a little matter of business." Turning to Tsi-Lo, he spoke rapidly in his native tongue: "Do they know why you have brought them here? Were there any others with them?"

"No, Mercadon, we told them nothing. We captured them without a struggle. Evidently all the crew of their ship stayed on board, for the four Americans were alone."

"It is well. You can leave the rest of it to me. You may go now." Tsi-Lo made his departure, and Mercadon turned back to the four friends.

"I hope you have in no way been inconvenienced by your little journey?"

Phil answered for the group. "I don't know who you are, or how you happen to be here, but why were we made captives and forcibly brought here?"

"My dear sir," the suave Oriental answered. "It is merely a matter of ethics. You see, Japan is today declaring war on your country, and so of course we were forced to detain you."

"Japan declaring war on the United States?" echoed Arthur. "Why, they haven't a chance in the world. They haven't a single battleship, dreadnaught

or submarine, and very few aircraft and little merchant marine. How do they expect to get anywhere?"

"But ships are not everything," interrupted Mercadon. "But let us not talk about it just now. That can come later. Have you dined lately?"

The four declared they had just eaten, and that, if they hadn't, they would not care to eat under the present circumstances anyway.

"Oh, but you must not feel that way about it," declared the Jap. "Here, you see we are all very friendly. Your stay, here, I hope, will be brief and pleasant. You will be held only until Japan's success is assured."

"Not very sure of yourselves, are you?" sneered Arthur.

"But we have good reason to be,—well, you shall see. Now, would you like to look over our establishment here?"

I assure you it will be very interesting and quite educational."

Notwithstanding the fact that the friends were displeased and antagonized at the turn affairs had taken, they were all eager to learn just what this whole elaborate scheme was about, and nodded their willingness.

Mercadon smiled, and escorted them from the building out across the circular balcony to the edge of the pit. There, a broad stairway led down to the depths below. They followed him down some hundred feet to the superficial bottom of the pit, on which rested the maze of machinery they had glimpsed from above. This, however, was not yet the bottom. He led the way down another stair into a huge, underground chamber, from which seemed to issue the tremendous roaring they had heard above.

The odor of ozone was strong in the air, and the roar almost deafened them. Looming up in the vague light of the room were numbers of huge masses of machinery from which issued the deep

hum. Shouting to make himself heard above the din, Mercadon explained: "Our workmen, using a chum drill, penetrated three thousand feet into the bowels of the volcano, and tapped an enormous steam-pressure area. Installed in this chamber are ten of the largest dynamos in the world. These generators are run by huge steam turbines and generate over fifteen million horsepower apiece, or a total of over one hundred and fifty million."

TURNING, Mercadon led the way back up the stairs to the bottom of the initial pit. The pit was probably five hundred feet across, and occupying its very center was the intricate mass the friends had seen from the balcony. It seemed to consist of an enormous searchlight with its reflector about ten feet in diameter, and which was mounted on a vertical shaft one foot through. Sturdy framework held the shaft rigidly in numerous bearings, and the base of the shaft was apparently geared to a motor on the floor of the pit. A two foot swivel conduit led from the generator room below the pit up to the huge light above. The whole set-up gave the impression that the light was constructed to revolve at a high speed.

In a circle around the searchlight, at a distance of about one hundred feet, was what appeared at first sight, to be an enormous picket fence. Closer observation showed that the "stakes" were in reality round shafts of some silvery white, translucent substance. The shafts were about two inches in diameter and extended from the bottom of the pit to the rim of the balcony—a distance of one hundred feet. They were placed a fraction of an inch apart—about the thickness of a case knife blade. The complete circle was connected both at the top and at the base of the pillars,

with heavy insulated cable, and the entire "fence" was mounted on heavy insulation.

"You see here," said Mercadon, "A—"

He was interrupted by the clanging of a gong. Turning hurriedly, he beckoned the four to follow him, and made his way up the stairs to the balcony above. The workmen had evidently completed their jobs, and had cleared from the pit. Men were assembling from all directions to the front of a building which was set well toward the edge of the balcony.

The friends followed the Jap as he hurried toward the assembled group. On a staging at the edge of the pit was a switch board with numerous dials and several ebony handled switches. Mercadon stopped before the board and asked, "The time has come?"

"Yes, your honor, it is now one minute till four o'clock."

Mercadon turned to watch the second hand of a clock incorporated in the board. As the hand moved around the dial, he laid his hand on the handle of one of the switches. As it reached the figure 60 he engaged the switch.

THREE came the low whir of a start-motor and the huge searchlight began to revolve slowly on its vertical axis. As it gained speed, Mercadon intently watched its dials. A moment passed, then he threw in a second switch and disengaged the first. The low whine of the motor grew to a screech as the light revolved faster and faster, till it almost seemed a stationary globe in the center of the pit. Finally when the motor reached its maximum, and the scream had passed up beyond the range of human ears, Mercadon again glanced at a dial—then threw a third switch.

The four friends stared in amazement. At the throw of the switch, evidently the current of the huge dy-

namos below had been thrown into the huge searchlight. The light was revolving at far too great a speed for any beam to be visible, but the entire pit was illuminated with an eerie violet glow. The circle of strange metallic rods surrounding the reflector gave off iridescent, many-hued lights, changing and scintillating with a weird, cold beauty. Forming around the circular fence, was a solid wall of coruscating, stratified radiance, which shimmered and flickered like the clear, cold glow of the Aurora Borealis. It was a magnificent scene, yet it gave the impression of tremendous, inexorably ruthless power, about which there was nothing calm or soothing. Rather it pitched every fiber of the body to the breaking point. Every nerve groaned in protest against impregnation with the racking, vibrating waves of unfathomable power.

Mercadon turned again to the switch board, made a few notations on a pad, smiled in satisfaction, and nodded to the friends.

"Come now, let us find comfortable chairs, where I can explain all this to you in detail—that is, if you care to hear about it."

Of course the friends did, so Mercadon led the way back to his office. When they were all comfortable in their places, the Jap began:

"Perhaps it is best to begin at the beginning. During the War of 1936 Japan had one of her scientists working on the possibility of developing a death ray. That is, one which would incapacitate the enemy at a distance. I was that scientist. My work continued even after Japan's terrible defeat and the treaty by which your country so inconsiderately deprived Japan of her ships and aircraft. At length, I discovered something. Not the death ray, understand, but something which puzzled the best of Japan's physicists.

"I had been working with tremendous voltages which I was attempting to modify and change in such a way that a concentrated beam would be inimical to life. One day while working in my laboratory, I happened to direct my concentrated beam on a small piece of ore which I had been analyzing. The water was running from a faucet over a sink in the corner, and I happened to notice that the instant I directed the beam on the ore, the water ceased running from the tap. Interested, I put a bowl of water in the center of the room, turned the beam on the ore, clamped the projector in place, and examined the water. I found that it had apparently congealed. The surface of the liquid would support a heavy weight."

The four Americans gasped, as they remembered their experience in the swimming pool, and the incredible phenomenon which had astounded the whole world.

"Yes, I see you remember your experience of a few months ago," chuckled Mercadon. "But that comes later. When I saw what my beam would do, my interest was aroused, and I carefully reanalyzed the piece of ore. I found it contained nickel, silver, iron, traces of iridium and of gadolinium. I then continued with my work by building up a synthetic alloy of these five elements, which I called hyolite. I found that when the high frequency beam acted upon this alloy, the same conditions were produced—that is, the water in the near vicinity exhibited the same peculiar phenomenon. After synthesizing and perfecting the alloy, I turned my efforts toward determining how the action of the beam on the alloy produced those phenomena. I won't bore you with the tiresome details of my research—but eventually I came to the conclusion that the high frequency current of my concentrated beam, striking on the alloy,

was in some way changed and diversified to produce an energy with which we are little familiar. This energy supposedly produces in an enormously high degree, that attraction which we call 'surface tension.' Surface tension, as you know, is that attraction between the molecules of a liquid which seems to hold them more firmly together at the surface than in the interior. This tension causes the contraction of a falling liquid into round globules; it makes possible the suspension of a steel needle on the surface of a calm body of water; it causes mercury to assume the shape of the tiny spheroids, when spread on a flat surface; it enables the tiny insect "skipper" to glide serenely over the surface of his pond without wetting his feet. We see it in the soap bubble. The dispersion of the high frequency beam by hyolite increases the attraction between the molecules at the surface of the water—hence increasing the surface tension, and produces a tensile strength on the surface which will support many pounds per square inch. This enormous increase of surface tension is, of course, what caused the drying up of the faucet, by changing the water, in effect, to a semi-solid.

"HAVING completed my preliminary research, I announced my discovery to the Japanese Government. None of them at first realized the importance of my research for that matter, neither did I at the moment. It was some time afterward that I happened to think that the ocean, in fact every ocean in the world could be congealed, if a large enough central power station were possible. Then if the entire Pacific Ocean were affected—. It was then that the stupendous possibilities of the thing struck me. Why—the Oriental armies could simply march across the sea and overwhelm America!"

"I again conferred with the Government heads, and put the whole thing before them. The possibility of it was doubted, and many were the heated debates which took place in the secret council. It was only after repeated demonstrations in my laboratory, and confirmations of my findings by every prominent scientist in Japan, that they finally consented to the scheme. I was given the assignment of planning a huge central plant for the production of the tension energy, with all the resources of the government at my command.

"The American and European countries were carefully watching every suspicious move in Japan, and it was deemed inadvisable to carry on the work at home; so, by a secret agreement, Japan bought the Galapagos Islands from Ecuador. I left immediately for the islands with two thousand trained men, and the best of every type of electrical and scientific equipment.

"Meanwhile the Japanese government was not idle. Deprived of all ships and aircraft, they at once set to work to develop the fastest means of land transportation in the world. They developed armed tanks capable of almost three hundred miles per hour. They designed and built huge numbers of transport automobiles which were capable of the same speed. They perfected big guns on traction carriages capable of nearly two hundred miles per hour. This time Japan was going to do the thing right. She brought about alliances with Russia, India and China, and exacted promises of a certain number of fighting men at a specified time. By this means she has collected an army of almost two hundred million men—more than the entire population of the United States.

"For ten years now, Japan has been preparing for the venture. For ten years I have been here on Indefatigable

with my helpers, working and planning for the ultimate consummation of my dreams. I have accomplished them. The machinery I showed you a little while ago is capable of increasing the surface tension of every sea, ocean and lake in the world to a point where it will support the weight of a steam locomotive.

"Of course the enormous power is furnished by the steam-driven turbines. These in turn activate the super-dynamos, which you saw in the room below the pit. The current from all these is collected, stepped up through transformers, and supplied to the urano-selenium cell in the huge searchlight in the center of the pit. When the power is turned on, the cell and the reflector rotate rapidly, the high frequency beam falls in turn upon each of the hydrite columns, which comprise the circular fence. These diversify the beam, and bring about the increased surface tension in every body of water in the world.

"At first, I was afraid the tensile energy would increase the surface tension of the liquid in the body, for instance, the blood, to a point where it would no longer circulate—hence the person would die. I experimented along this line, and found that it had no appreciable effect whatever on the body fluids. The energy of living matter seems able to successfully nullify the enormous tensile energy. I have never satisfactorily been able to explain just how it does this. However, it is sufficient that it happens to do so.

"Just two hours ago, now, as you know, I threw the switch which started the generation of this energy, and for almost two hours now, two hundred million fighting men, and thousands of efficient engines of destruction have been racing toward the west coast of the United States at over two hundred miles per hour. At that rate, it will take

them a little over thirty hours to reach America. Of course all America's fine elaborate battleships, her submarines, her destroyers will be absolutely useless. They will be all be stranded high and dry on the hardened surface of the water. Of course they can use their airplanes, but all the airplanes in the world could not stop the Asiatic army from reaching America. Besides, America will be taken completely by surprise. She has not the slightest inkling of any action against her. The Japanese and allied armies will avoid all the heavy coastal fortifications, making their way inland, and coming upon the defenses from the rear. Thus the defeat of the United States will probably be accomplished in a few days.

"As for the phenomenon of the "hard water" which so amazed the world a few months ago—that was merely a preliminary test of the efficiency of our plant here."

"**T**HEN you mean that Japan is now on her way to conquer the U. S?" gasped Phil.

"Let us not say 'conquer,' let us rather say Japan is merely asserting her rights to more land for her crowded population," corrected Mercadon.

"You mean to say, Phil, that those damned chinks will be over-running our country in a little over twenty-four hours?"

"That is what our good friend here has attempted to convey to us."

"Well, Good Lord, can't we do something about it?"

"I don't know what it would be, we seem to be pretty well cornered."

"That is exactly it, my friends. Do not attempt anything rash, for it will get you nowhere, and will only force us to put you in bonds for a day or so," advised Mercadon.

Eva and Joan said nothing—there

really being nothing to say under the circumstances. An idea was beginning to form in the back of Phil's mind, but he gave no hint of it. "What if he could reach that switch near the pit for just one moment? What if he could shut off the mighty power beam for a single instant? Would not the released tension allow the two hundred million soldiers and their vast equipment to sink into the depths of the broad Pacific? What if the power were turned back on—then it would be too late. If he could only make a break for it—no matter what happened to him afterward."

Mercadon seemed almost to realize Phil's thoughts as he calmly continued, "Of course, to prevent any accidents, the power switch was automatically locked the instant it was thrown—thus nothing less than a major breakdown can frustrate our plans. For the last two months, the workmen have been busily engaged in endeavoring to make our set up here absolutely perfect; accident, brain- and fool-proof."

Phil's heart sank. Had Mercadon read his thoughts? But no, of course the Jap had thought of the same possibility Phil had been pondering, and had carefully prepared for it. Could he do nothing at all to prevent the yellow hordes from reaching and overrunning America? It didn't seem so.

Mercadon continued, "Here is one of our latest developments." He turned and led the way to a circular basin of what was presumably water, though its surface was now, of course, in a solid state. Over the water, with the lower end resting on the surface, was suspended a heavy steel shaft. The shaft was enclosed in a tubular housing at its upper end, and a large dialed indicator was attached to the housing. A Jap was constantly watching the needle on the dial. "This is what I call the "tension indicator." It shows any infin-

itsmal variation in the tension of the water."

PHIL listened to the Jap's words while his own mind was busy with potential possibilities. "If he could only get word to one of America's huge aircraft carriers at Panama. Of course the ship would be stranded because of the congealed water, but a plane could fly over *Indefatigable's* crater and drop a bomb on the diabolical mechanism. But how in the world could he get word to the aircraft carrier? Say—the Japs must have a powerful broadcasting station here—could he possibly get to it and send his message? No, that was out of the question; of course it would be carefully guarded against any possibility of that. Wasn't there any way he could warn them? Of course if he could only get out of the crater and back to the "*Corella*," it would be an easy matter for the ship's operator to get in touch with the aircraft-carriers." But Phil knew every move he made would be watched, and any attempt at a get-away would end in defeat.

"But wait—the radio station—*interference*—the tension indicator—confusion—" Phil's mind raced. "No, it was impossible. A scientist of Mercadon's ability would never have overlooked a detail like that. And then, again, it might not work at all, anyway. At best it was merely a chance, and a mighty slim one at that—Still, it was a chance."

He spoke casually. "I suppose you have a broadcasting unit here, Mercadon."

"But certainly," replied the Jap. "We have, I believe, the most powerful station in the world—a million watts." It was easy to see that Mercadon was proud of his station.

"Could I take a look at it?" asked Phil. You see, I am interested in radio—dabble with it at home a bit myself."

"Surely," smiled Mercadon, "I will be glad to have you see it."

He turned and led the way to a structure a few hundred feet from his office, and motioned the four friends through the door. Truly, it was a huge broadcasting unit. Banks of tubes were on all sides, and panel after panel with their myriads of dials and indicators lined the walls. A microphone stood on the operator's desk at one side. Phil interestedly examined the intricate apparatus, and studied the dials and indicators minutely.

"Certainly is a wonder," he finally said. "I'd like to see a transmitter like this in action."

"Very well," returned Mercadon. "This will be a good time to send the news of your capture to the home office in Japan.

"I might say," he continued, smiling quizzically at Phil, "that we are operating on an extremely low wavelength here—a small fraction of a meter. We do this to avoid any possibility of our messages being picked up by outsiders, and to prevent any possibility of their locating this station with directional loops. So you see that even if you might manage to overpower me and send a message, no one would receive it but my friends in Japan."

"I had no thought of such a thing, I assure you," returned Phil, as he thought to himself: "Extremely short wavelength—good!"

"FINE. Now that that is settled, we shall proceed." With these words, Mercadon switched on the power and proceeded to talk rapidly into the microphone in his native tongue, while Phil watched the proceedings interestedly. Phil walked over to one of the panels and pretended to watch the power indicator intently, while covertly watching the door of the station.

Whatever Phil expected, it wasn't long before something happened. An intensely worried Jap came bounding through the door and spoke excitedly in Japanese, "My God, Mercadon, the tension indicator is going down fast!"

Mercadon leaped up in alarm. "Impossible!" he cried.

"It is! Come and see, quick!"

Mercadon ran after the frightened Oriental without stopping to shut off the transmitter's power, and with never a glance at the Americans. Of course the friends had not understood a word of the conversation, but they knew from the tones and actions of the two that something momentous was happening. Phil nodded in satisfaction.

"Come now, quiet—now's our chance," he whispered to the others. Outside everything was in a hubbub. Mercadon barked out orders rapidly and men scurried here and there to do his bidding. No one had any time to observe the four as they crept cautiously around the corner of the building and made swiftly and silently for the yawning black mouth of the tunnel.

They crept along for some distance before Phil produced a tiny flashlight from his pocket and illuminated the tunnel ahead of them. "I was afraid to show a light till we got back a little way," explained Phil. "Now all of you run just as fast as you can."

There was neither time nor breath for more words as the four raced through the dark passage. It seemed many times farther now, than it had when they sped swiftly through the tunnel in the high powered car, and when they finally emerged into the fading light of early evening all were panting for breath, and the two girls were staggering.

"Sorry-to-torture-you-girls-like-this, but we've just got to make it to the '*Corella*!'" panted Phil.

They slowed down to a fast walk as

they wound their way along the tortuous curves of the smooth road. Whenever the girls recovered their breath sufficiently, they ran for a while. Thus, by alternately walking and running, they traveled for some considerable distance before Phil stopped suddenly and held up a warning hand. "I hear the automobile—they're after us. Come on, we've got to get away from the road!" He swerved to the side, and the four scrambled up the bank of the ravine and out on the cacti covered slope. Distinctly now, they could hear the sound of the approaching car. "Keep going" he told them. "They can't spot us, the ravine is too deep."

And keep going they did, not stopping to heed thorn bushes, rocks, or cacti. They heard the car whiz on down the ravine toward the shore as they continued their mad flight. It wasn't long before they heard the machine roar back up the road toward the crater.

"Going back after reinforcements," explained Phil. "They'll bring a lot of men down here and spread them out to try to find us. We've got to hurry now!"

HOW they ever arrived at the beach they never knew, but there they were, torn, bruised, and bleeding and dog-tired. There were the lights of the "*Corella*" winking at them out in the harbor.

They ran across the smooth surface of the congealed water in less time than it takes to tell and thankfully climbed aboard the "*Corella*" to be met by an astonished and somewhat worried Captain.

"What in the world has happened?" he asked. "You all look as though you have been fighting wildcats!"

"We have," said Phil briefly. "Where's the radio operator, quick!" With that he rushed for the transmitting room, and the hurriedly summoned operator switch-

ed on the power and sent the message Phil dictated.

"U. S. aircraft carrier, Panama,—U. S. aircraft carrier, Panama—." The operator nodded as he heard the answering signal. "Send planes to bomb central crater on Indefatigable Island, Galapagos, quick,—Japanese plot under way to conquer America—mechanism in crater producing phenomenon of "hard water." Act at once!"

"O. K." said the operator. "What's up?"

"Tell you later," Phil flung over his shoulder as he rushed from the room. He hurried back on deck and found the Captain talking with Arthur. "Any guns on board?" Get them out and arm the crew. I expect an attack from the shore any time now."

He was right. It wasn't five minutes after the rifles and revolvers had been distributed that they heard the sound of an approaching automobile. Soon the headlights appeared, and the car came to an abrupt stop. Dark figures piled out and hurried to the water line.

"Shoot them if they start toward us," Phil ordered. "It's a matter of life and death."

Dark shapes swarmed across the water toward the "*Corella*," and stopped only when the crew started to fire. The Japs were not unarmed either, as the chatter of a machine gun, and the spat of bullets on the yacht's deck soon proved. For some time a real battle raged between the crew, and the men below on the surface of the water. However, the outcome was foregone; the crew of the yacht had shelter from the fire, but the Japs had none. Soon the last of them lay stretched on the still congealed surface.

Now, those on board the yacht heard the distant drone of approaching planes. Soon they were circling above the crater. Moments later the deep, muffled roar of a distant explosion, told of the destruc-

tion of the mechanism in the crater. Immediately the "*Corella*" lunged deeply, and rocked violently as the solid surface of the sea gave way and returned her to her rightful natural position. The bodies of the slain Japs bobbed up and down for a few moments with the action of the newly released waves, and slowly floated away.

Out on the broad Pacific, where a moment before, an unending line of armed uniformed men had been speeding in armed tanks and huge transports at over two hundred miles per hour for America; where thousands upon thousands of almost impregnable, armored cars, and millions of tons of huge guns had been racing smoothly east—now there was nothing—nothing but an endless reach of rolling, tossing water. The sea had opened and swallowed them up. Absolutely nothing remained of the Asiatic Allies' ten years of work; two hundred million young men in the prime of their lives, ambitious, energetic—irrevocably gone. Truly it was a destruction of cataclysmic proportions—but America was saved.

The "*Corella's*" motors hummed suddenly, and she drew slowly away from the bleak and most certainly inhospitable shores of the Island Indefatigable.

In the salon, Phil was anxiously checking up on the crew, and after finding all present and none injured, he sank back in a deep chair with a sigh of relief. There was to be no rest for him for some time, however. Everyone was besieging him with questions. After the four had told the story of their capture and their experience in the crater, Arthur turned to Phil.

"Say, old man, just what did you have up your sleeve there in the radio station, and just what caused our yellow friend so much excitement that he even forgot our existence?"

"Well," began Phil, "you see, I had been trying to figure out some way that we might make a break for the tunnel when Mercadon showed us that tension indicator. I wondered at the time what would happen if that indicator showed a decreasing surface tension. I knew that he would probably forget all about us in his effort to determine the trouble. You see, just one second of released tension, and they were lost."

"Well, about that time I thought about the radio transmitter. You've heard of "interference," haven't you, as applied to the transverse waves of the electromagnetic series?" Then you know that when one wave meets or overtakes another, it may either double or completely nullify the effect, according to whether the crests and troughs of the two waves coincide, or whether the trough of one meets the crest of the other. In the first case, the intensity is doubled, in the second it is entirely destroyed. For instance, two loud sounds, if so pitched and directed that the crest of one wave meets the trough of the oncoming wave, will become a complete silence. Of course sound waves are longitudinal, but the same instance is applicable to both longitudinal and transverse waves. In the same way, two bright lights forming "interference" with each other will produce total darkness.

"It is exactly the same with the waves of the radio broadcast. Interference

between the waves of two stations gives the crooner's voice the effect of a slow exaggerated tremolo when two stations are near each other on the wavelength dial. I was not at all sure that the energy distributed by the tension generator was of the same type, furthermore I didn't know whether the radio waves would interfere with them—that is, strike them crest to trough so as to nullify them, even if they were. Mercadon's statement of the tremendous power and the extremely short wavelength they were using gave me hope, so I inveigled him into trying out the transmitter. I knew, of course, that what little interference there might be would not seriously affect the surface tension—not even enough for the Japanese armies to notice it, but I hoped that it would affect the tension-indicator enough to alarm Mercadon and cause enough commotion to enable us to escape. It was only a chance that the relatively puny power of the transmitting station would affect the gargantuan power of the tension energy at all,—but it worked."

"I can't figure out yet, why a man of Mercadon's ability would slip up on a detail like that, but it's just one of those things that happen to the best of us."

Arthur gazed at Phil admiringly.

"By Jove," he said, "I do believe your head will do to hold your ears apart."

THE END

In the April Issue
RELATIVITY TO THE RESCUE
By J. HARVEY HAGGARD
THE SUNLIGHT MASTER
By E. J. VAN NAME

The Conquest of the Planets

(Mother World)

By JOHN W. CAMPBELL, JR.

Our readers are so fond of Mr. Campbell's work that we are sure that they will share our regret, that we are coming to the end of the story, for this brings us to what may be justly termed a happy ending, where the workers for evil are finally overcome. We hope to give more of Mr. Campbell's work in the near future.

Conclusion

BRUCE turned to Philips. "Tom, they're sending out the general call? Everyone knows the plan?"

"Yes, Bruce. They are beginning now, I think." He turned around and looked at the long row of electroscopes. Fifty men, seated before fifty sets of apparatus, were watching fifty different scenes. These fifty were all equipped with small projectors, capable of throwing voice, and, if necessary, a small scene. Quietly, low voices were speaking into the projector transmitters. "All of the Freedom Members will begin at once to carry out their parts under the General Plan—" Name after name was read out. All over the city the leaders were sending out their signals. The search of the city was barely well under way, it had not been called off by any means. But now—it ended abruptly. From eighty thousand apartments two hundred thousand people began to mill outward. In a moment, the Polshin guards were surrounded by masses of men, moving with such a deceptive air of slow determination, that the Polshins, who had never seen a planned, directed resistance, did not comprehend. Then they tried to

use the tactics that had always served against the few half-hysterical attacks they had witnessed. Their shock-rods glowing, they advanced on the nearest of the Plehbs, ordering them angrily back. Around each Polshin six or eight Plehb men appeared, young, powerful Plehb men. Calmly they walked up to the Polshin guards. Crackling discharges of electricity sprang from the shock-rods—and rolled harmlessly off of the blue suits of the Plehbs. The Freedom Scientists had fulfilled their promise. Insulated suits had been distributed. Helpless, the Polshins were disarmed by men twice as strong as they were individually and numerically a hundred times as strong.

It was a wonderfully well organized movement. Of the three thousand seven hundred and forty-two Polshin Guards, in that city that day, only three hundred and eleven were killed. Sometimes—hate was too strong. And every Plehb of the Freedom movement was equipped with death-dealing weapons now. Sometimes a Plehb would recognize in a captured Polshin the man who took away his mate, or his daughter. Took her into the horrible slavery which everyone of them had witnessed time and again



Slowly her nose pointed downward, while a dim red glow rose to incandescence, telling of broken power-leads.

on their telectroscopes. And from the least, lowest vertebrate, through all history, every male has fought hardest and most savagely for three things: life, his mate, and his offspring. And of those, perhaps his mate should come first. Never would so unified a movement have been possible without the telescop to show what happened to those poor creatures who were taken by the Polshins. It was a wonder so few were killed. Perhaps more would have been murdered had it not been that most of these Polshins were young men, some from foreign cities, and nearly all as yet unmarked by any Plehb as his own prey. And Bruce and his companions had worked hard, had taught and lectured, sought to prevent the venting of vengeance as cruel as anything the Polshins did. In some degree this had been effective, too. But most of all, many and many a Plehb had but a few minutes before seen that a Polshin need not necessarily mean an utterly cruel beast. That day Carl Manning saved a thousand lives.

BUT in half an hour, N'yak was in the hands of the Plehbs, utterly and completely. N'yak underground, that is. For above ground, the Polshins were prepared. With the first sign of the active rising, the Polshins had set up their defenses according to the rules their forefathers had lain down. Great ion guns were mounted before the mouth of every surface tube. The power-controls had been cut—but the Plehb mechanics this time had destroyed the effect to be brought about by this move before it was made. Five material energy generators, each no larger than a man, had been set up, and were supplying all N'yak with abundant power. They had been set up and connected in, before the Polshins had cut the power controls.

Anxiously Bruce conferred with the men in other cities. In not every city had the rising occurred, only in those which felt certain of success. Eight of the cities of the Union were still under the rule of Polshins, Polshins patrolling in squads, with light ion guns under their arms.

But Bosn, Shlcago, Felfya, all the cities which had been in the Union for any length of time, and possessed any number of proton-guns had revolted. The proton-guns were trained on the surface tubes by Plehbs, where they were not ready to drive out the Polshins unaided, and ion guns covered the tubes in cities where the Plehbs had the balance of power. In some places, both forces protected the tubes.

N'yak was ready for the next step. Overhead, the telescop showed atomic cruisers roaming ceaselessly, watching for any sign of attack. On the ground the surface crews in the gun-tanks, their mighty mounts crawling over the gardens and crushing ornamental bridges, prepared to aid the defense, to keep the rebel Plehbs below.

Bruce piloted the "Freedom I" as she sailed up through the hidden, unsuspected lock the Plehbs had built. Instantly, two huge atomic cruisers bore down on her. Their mighty ion-guns flaming destruction, the stone of the lock crackled in terrific heat, and the ground seemed to burst into flame. But the "Freedom" rode calmly nearer, the ion-flame splitting widely and washing off of her magnetic shield. A rain of the accumulator shells burst in intolerable flame on the outer surface of her momentum-wave driving field.

No material thing could reach the Freedom ships. One, two, finally four of the fighting ships of the N'yak Union had appeared. A dozen great atomic cruisers clustered and now their heavy radio-frequency beams began to bore in.

Effortlessly, the slumberous giant of material energy smashed the ten million horsepower beams of the atomic cruisers to flaming static discharges.

Bruce moved. Slowly his fingers closed on the proton gun release. From the nose of his ship a blue-green tongue of energy, so stupendous as to be beyond measuring, drove out. Five hundred feet through the air the first discharge crashed its way, the two billion volt protons crushing the molecules of the air to hydrogen and sweeping them along. The electron discharge smashed out, then swiftly the alternations built up. Like a slow-licking solar prominence the unbelievable flame reached out—so slow seeming, yet so swift, the fleeing atomic cruiser vanished suddenly with but a slight alteration in the awful flame. Her magnetic shield was not built to resist two billion volt protons, nor the nearly two billion horsepower that drove them.

WITH a long-drawn roar of thunder, the column, the beam had built up for itself in the air, clapped shut, as Bruce cut off his proton tube. There was not so much as dust to fall back when it died. And now the flame licked out again, stretched, and another cruiser puffed into pure, blazing hydrogen gas. And Mother Earth sent up a great tongue of her own lightning in protest, a tongue of power, feeble and unreal in the frightful glare of the released giant of matter.

The atomic cruisers were fleeing toward the N'yak fortress now. After them the Freedom ships sent a flight of tiny bullets, bullets that glowed strangely as they tore along at speeds greater than meteors, leaving only the smashed ions of air to mark their tail. Driven from momentum-wave guns, they overtook the flying cruisers as readily as on old time rifle bullet overtook an airplane.

One touched a cruiser. Instantly, without sound save the soft puff of a rising tongue of blue flame, the tail of the cruiser seemed to condense, collapse upon itself, then melt away. Disintegrator bullets had destroyed it—bullets that released electrostatic fields of such unimaginable intensity that the matter near them was torn to atoms. Not noisily and flashily, for noise and light are escaping energy, but so efficiently that they were quiet. Only the gaping hole in the tail of the cruiser told the story.

Slowly the five hundred foot ship halted as the air resistance stopped her. Slowly her nose pointed downward, while a dim red glow rose to incandescence, telling of broken power-leads. She vanished altogether in five more sections as other bullets struck her.

And Bruce turned, and looked in vain for another enemy. Four Freedom ships rode unharmed in the air. The Polshin atomic cruisers were gone. No wreckage, no broken bodies remained. Only clear air.

And that day, at Mars Center, a scientist with a peculiarly fresh, youthful face, and deep age-old eyes, smiled as he told the president of the Martian State what he observed. "Earth will redeem your pledge to her soon, John. The seven centuries you mentioned have passed. Today, my instruments were upset badly. At first I thought a solar disturbance had done it. It came from the direction of earth. It was an electric field—a field of an intensity we have never produced. Whatever caused it, anything within its influence must have been reduced to sub-atomic particles."

Bruce Lawry looked down at the fortress. The ten-foot tungsto-iridium walls loomed grey and stolid in the sunlight. A thousand feet in diameter, four hundred high, the fortress was scarred here and there by the wars of the Old Days.

But nothing had ever bitten deeply into her layers of magnetic and radio-frequency screening. No shell had pierced her. No heating ray reached through her screen. A ship, loaded with ultra-powerful explosive had driven at her in suicidal death. But the explosive had not reached her, only flying fragments of the ship.

THE N'Yak fortress was the most powerful in the world. Out of the range of its ion guns, Bruce was watching thoughtfully. Heavy rifles, hurling atomic explosives were firing angrily at him. A solid sheet of rippling flame roared around him, and despite its automatic balances, the "Freedom" wavered in their concussions. Bruce needed no telescopc to see inside that metal walled fortress. Here was a steel-barred cell, a white bed, and a mass of dark, wavy hair, and a face with closed eyes, and warm, half-smiling lips. Smiling still in sleep over the joke played on Omallin, the joke in which she was the pawn. Behind those metal walls—.

And Bruce could see also the dark-haired slim doctor with a blank look of stupidity on his face, and a deep, human twinkle in his dark eyes. Also behind those metal walls, Manning deserved Bruce's deepest consideration. But more still, by the side of Manning, Bruce seemed to see dozens, scores of Polshin figures, stalwart men—men for all that they were Polshins. Bruce had preached a doctrine and believed it. Despite what had happened, he could still believe it. Some of the Polshins in there were as truly victims of the system as was he, and any Plehb. Victims of a system that taught them utter inconsideration for Plehbs.

And that fort was not like the atomic cruisers. The fort was practically unlimited in its power, even though dependent on atomic rather than material

energy. The fort could draw tremendous volumes of the cold, clear water from the broad river flowing near by, volumes great enough to carry away even the millions of horse power that would be lost through the inefficiency of the atomic engines. Then—there was no reason why that fort should not develop two billion or two hundred billion horse power, at least for a short period. True, they used metallic conductors, unaided by the space-columns of the "Freedom" ships—but they used the ten-foot metal wall as a conductor for one polarity as Bruce knew. The other was led through silver pillars ten feet thick. Bruce felt sure he could have reduced it with a few hours struggle. Eventually, even those mighty metal conductors would have given way, for when atoms fight against energy conducted by space, the warp and woof of the universe, the outcome is foredoomed. His four cruisers could have arranged themselves broadside to the fort, allowing both stern and bow proton-tubes to come into action. Each ship turning the full power of those frightful ultra-atomic beams, driven by forces that made and broke suns, eight colossal tongues of energy, then the magnetic deflectors of the fort would have been loaded to the uttermost. And Bruce had still an untried weapon—the magnetic field with these raised also to their maximum, draining and weakening the field of the fort—.

Bruce frowned. Earth would tremble to her core under the opposing stresses of those titanic engines. Her metal heart would strain upward and twist convulsively. N'yak, Felfya, Bosn, even Pizbur and Shkaga would be endangered by the upheavals resulting. N'yak, founded on a rock though she was, would slip slowly into the sea, for below, far below, the deepest level of the city, was the great geological fault line.

Yes—Bruce knew he could crack open that fort. Two things would happen. N'yak, and the territory for at least five hundred miles around it, would writhe and strain under the pulls of those struggling Titans. And—when finally the magnetic and electric defenses of the fort fell, they would inevitably fall abruptly, like an electric light bulb when the fuse blows out. And as quickly, the hundreds of billions of horse-power, struggling to break down those invisible walls of force, would wash in—and through. Beneath them, the ten-foot walls of practically infusible metal would vanish as a single magnificent tongue of burning hydrogen gas. The walls—and Lora. Lora, and every human thing within it.

SLOWLY Bruce looked at the men quietly waiting for his word. Without speaking, he tuned in the stage at Freedom Hall. Philips, Powr, a half-hundred others were looking at him, watching him.

"I can break open the fort in either a thousandth part of a billionth of a second—or within six hours. In either case, no single thing within that fort will continue to exist for even the briefest part of a second after the walls fall. And—N'yak will slide into the sea, and Mother Earth will strain and heave with the forces I must use. But—I could do it. What are we to do?"

"We cannot say," replied Powrs. "You are in complete command of all fighting. Bosn has reached the same position. Shkaga and Felfya. They are waiting for your lead."

"I will come there," decided Bruce.

Three ships remained circling the fort. Steadily the fort was sending out streams of every form of destruction they knew. Effortlessly the matter-giant brushed them aside. A tractor beam designed in the old days to pull down a full-fledged

atomic battleship reached out, and tugged at one of the Freedom ships till the rocks of N'yak ground protestingly on each other. Effortlessly the material energies neutralized the pull—with the greater power of the momentum waves.

Bruce returned slowly to Freedom Hall. They had won—and not won. It was stalemate now. What solution could they reach? The plan Lora had mentioned? Somehow that did not cover the conditions. It had seemed so simple and right to call down two ships from Felfya, to from Bosn and two from Shkaga, and combine to destroy the fort in that thousand billionth part of a second Bruce had mentioned. Now—new understanding, new contacts had changed the conditions.

Slowly Bruce stepped down from the hundred and fifty foot ship as it landed in its berth.

CHAPTER XII

ISUPPOSE," Omallin's image on the Freedom Hall stage was saying irritably, "those animals are observing us. Have we no privacy whatever left?"

Bruce could not resist the temptation. His image appeared on Omallin's right hand. But now he reduced his image to a foot-high figure. "No, Omallin. You have nothing any more. Neither privacy, nor power."

Omallin started violently, and pulled his hand away hastily. Then he swatted heavily at the foot-high image—and his hand passed through it unhindered. "Furthermore," Bruce continued, "we can crack that fort of yours like a rotten egg any time we want to."

"Hah," Omallin snorted angrily. "I didn't notice that you did it. A fort is a very different thing from a light atomic cruiser."

"Our Freedom ships are also very different. Your stupidity is too great

for me to convince you short of actually destroying it. And then, of course, you would no longer exist. I may truly say that in all probability you will die unconvinced."

"Animal! For centuries we have proven our superiority, and when, for five minutes, you gain some slight advantage, you presume to claim the control."

Bruce shook his head slowly. "Animals—human beings. You are an animal also, Omallin. A swine I think. We are not only five minutes ahead of you. We are five thousand years ahead. We have all the civilization earth ever had at our disposal, and with this very machine I have seen the face of the men living on the planets, from Mercury to Jupiter's moons.

"We have all you ever had, all we ourselves have developed—and all the things that the Planets have developed through the seven long centuries, while earth slipped back and back to the vicious feudal system that produced you. Do you know that your Polshin President Mukarty in Washum is also in the great metal fortress there—surrounded by circling ships just like those over your heads? Your Polshin power has fallen. In some places advance is slower, since our organization is so new. Therefore we are waiting yet a little."

"The planets! The planets! Impossible," roared a Polshin councillor. "I have read the science of the Old Days and I know that no possible telescope could show such scenes."

Bruce laughed gently. "The latest record you have is surely seven centuries old. Look—and decide. This is Mars Center." In the place of Bruce's image, on the table in the N'yak fortress appeared a ten-inch globe of Mars, a globe that revolved with a majestic slowness that lent even this tiny image a mighty grandeur. The globe expanded

till it was five feet through, then slowly the edges faded, till only one city, Mars Center, with its looming, stately towers, showed.

Then this vanished, and Jupiter with his nine moons, great and small, appeared, grew, and the great, sprawling city, Jove, centered on the table.

And Bruce reappeared. "Seven centuries the Planets have advanced—and we have done a bit ourselves.

"I am troubling to speak to you only because certain of the Polshins within your walls are fit to live. We can of course destroy that fort—but we would destroy some worth while lives. Even a few of our own.

"If you will lower your magnetic shields, we can promise life to some of you. And all of your people will be tried justly before a court of the men from the Planets. Do you know the Pledge of the Planets? Did your ancestors take down the words of John Montgomery that day when Interplanetary left Earth? They have waited, and they will help earth now. Take down your walls, and accept trial. Otherwise—"

"Otherwise?" snorted Omallin, "your bluff will fail. In all the wars of earth, wars that would make your puny rebellion laughable, this fort was never so much as endangered.

"And—otherwise you will have to kill nearly three hundred of your own animal species. Including this Lora, who seems to be one of your leaders."

"I have a proposition in return," Omallin's fat lips smiled. "We can exist here forever, as you know. We like the gardens, however, so I will make this proposition. We will begin at once, and for nearly a whole year we can keep on, killing one of your animals each day—and all day long. The third one can be this Lora, for she will awake then. If you gain wisdom, you can turn over to us one of your ships, your leaders, and

these seeing machines. In return we will consider giving you certain privileges."

FRом beyond Bruce in the Freedom Hall came a mighty, angry roar of sound. It echoed through the transmitter, and into the metal-walled room where Omallin sat. A Plehb jumped up beside Bruce, and furiously he denounced the Polshins. "For every Plehb you harm—ten of the Polshins we have captured shall die as they die!"

Omallin shrugged. "It is not I," he replied. "That is the difference between such animals as you and a Polshin."

"Your stupidity is too great," sighed Bruce, returning to his position as the furious man was drawn away. "I was afraid you would believe nothing. However, I will give you two days to consider it. Also, we will communicate with others of the people within your fort."

"The first Plehb shall begin to die now," roared Omallin, rising to his feet, and shaking his fat fist at Bruce's figure, "and she shall pay for those repeated insults."

Bruce cut off the switch slowly, his face grey. He turned to the Freedom audience, and spoke slowly. "There seems to be nothing we can do. There is only one hope and a faint one. But I will try it. I have been studying at the University on Mars Central these past months—perhaps I have gained a new viewpoint that may help. Otherwise—there is nothing I can do. Since that is so—perhaps—it would be better—if we did not watch Omallin for a while."

Bruce left the platform, and hurried away to his laboratory. His fellow scientists were arriving rapidly now, returning to their work. Bruce called them to him, and rapidly gave to each of them an experiment to perform—all directed toward one end. And he himself worked

at the one, determining, key experiment.

Each faint sound in the laboratory, each hum of apparatus and sound of low voices seemed to ring shrill in his ears. Shrill—shrill as a tortured woman's scream heard through echoing corridors.

Bruce shook his head, and concentrated on the delicate task before him. Presently lathes began to turn, and the cry of the cut metal brought back the shrill ringing. Impatiently Bruce tossed his head, then bent lower, closer to his work.

Hours passed swiftly. Reports came in from outside, reports of progress in Bosn and Shkaga, in cities from San Friso to Myami. Everywhere Polshins were bottled up in fortresses, cut off from communication with the rest of the world by the washing, roaring static that the material energy engines were setting up now. No radio waves could penetrate it, and frightened Polshins conferred and trembled. But land-lines, deep buried and protected, some secret and hidden, maintained communication between cities on the continent. All were waiting for the N'yak decision. Some had decided to try similar tactics. Bruce thought of that with an infinite pain. With freedom so near for those victims —this!

AND reports were coming from the scientists of the Freedom laboratories. In other cities, Freedom men were working, though here in N'yak the best were gathered under Bruce. Working, seeking to do what they had never been able hitherto to accomplish.

The first day passed. And now the second dawned, and ceaselessly Bruce worked on. He would not sleep. Around him other men drove themselves on. But one by one they were forced to drop out as unsteady hands, weighted by fatigue, jarred delicate experiments into oblivion.

Bruce would not stop. But Dr. Grant finally stopped him with a bit of drug in the food Bruce allowed himself. For five hours Bruce would sleep, sleeping so intensively he would wake refreshed, as from twelve hours of sleep. His assistant Director carried on the work, glimpsing vaguely the trend Bruce had established.

It was late in the second day when Bruce woke, furiously angry at first. Then he realized Dr. Grant's wisdom, and slipped back into his place.

First the reports of outside affairs came in. Half the Polshins in the N'yak fortress were nearly ready to believe the Plehbs could do as they claimed. The rest were utterly unconvinced. There would be no yielding on their part. Plehbs were animals.

A large Polshin audience had dropped in from time to time to witness Omallin's—resistance. Manning had risked his life for the Plehbs, and one hundred and three Plehbs slept now under deltamorphium for the full three days it allowed. But Manning was in a cell himself, awaiting action on Omallin's part.

A second victim was the object of Omallin's resistance now: he was adhering faithfully to his program. His first victim had died for twelve and a half hours.

Hurriedly Bruce turned to the Laboratory reports. He thought of Lora, not of the one assistant he needed most now, but of Lora, faintly stirring to wakefulness now, as the drug in her veins was gradually absorbed.

The laboratory reports were good—but somehow something seemed lacking. Rapidly his mind ran over every possible item that could help. It was a clearer, refreshed mind.

And then, in the way of man's mind, it functioned. A dog learns a trick slowly, by elimination of those moves

which produce no results. A man does not do the thing at all—or suddenly knows the whole secret, and the direct way to its accomplishment. Bruce saw.

With a sudden shout that stopped work over all the Laboratory he sprang to his feet. "Buck—Hal—Will—and Brady. Come here." In syllables so swift his hearers could scarcely follow, he told them what he wanted. Instantly he turned to his task. The problem that had baffled them seemed solved!

In two hours, the first of the apparatus began to arrive, the new devices. Instantly Bruce and his assistants began setting it up, attaching it to the great telectroscope in Freedom Hall. In three hours, half the work was done, in four, it was completed. New apparatus, untried in connection, was ready. The transfer of *ALL* the electron waves was to be attempted! The transfer of not merely one ten-thousandth part of the whole—but *All* of it.

"I don't want to try it on a human—even yet—"

"Yes, you do, Bruce. There is one human—" interrupted Powers. "And we may hope by this time—that it fails in her case."

SLLOWLY Bruce's color drained from his cheeks. With a steady hand he adjusted the great machine, focussed it, and turned it on. A room appeared in the N'yak fortress. A bare metal room, with a half-dozen scarlet figures. Five of them were Polshins, scarlet because of their clothing. The sixth—

Bruce worked with all the rapidity he could muster. One of the Polshins was wrapping electric resistance wire around the sixth figure, a bound, softly moaning figure. Cautiously Bruce advanced a control, and a light, hazy outline surrounded the sixth figure on the Freedom Hall stage. Under Bruce's manipulation the haze condensed, and

only the additional solidification told of the added apparatus's work. Abruptly Bruce drove home a plunger switch. A mighty humming roar echoed through the great auditorium, the straining pull of the matter-giant, as the entire structure of the Universe was altered by one small fraction.

Then it died, died as abruptly as it had come. On the stage the sixth form crumpled slowly to the floor. The five others started back in amazement and terror—then rushed forward to pass their hands through the spot where the material, physical body now lay. Bruce had set up a new electron-wave pattern, and instantaneously the electrons, the protons, then atoms that had made up that girl's body, simply *WEREN'T* where they had been, but in a new position—on Freedom Hall stage.

Dr. Grant was kneeling over the blood stained figure. She was moaning no longer. Bruce joined him, tense and white. Slowly, the doctor turned his face up to Bruce. "I'm sorry Bruce—life is too marvelously delicate a balance for the titanic forces you need to hurl matter out of existence, and back into existence elsewhere. It was not her condition. The vitameter shows that every individual cell is dead, even the lowest types, the hair cells and finger nail cells—though that may be because of what they did to her."

"I think that you have set yourself an impossible task, Bruce. How much power did you use in doing this?"

"Three and one-half hundred billion horsepower hours. I killed her."

"She would thank you Bruce, you know that. But don't you see that such a titanic power—more than even this whole city uses in a year—is too much for life to be associated with?"

"When will Lora wake, Grant?" asked Bruce softly.

Grant looked at his wristwatch. "She

should wake about now or soon, Bruce."

"I will bring her—when she wakes." Slowly Bruce sat down. He looked at the great machine with dull eyes. Utter quiet reigned in Freedom Hall. A pair of soft-shod hospital attendants came, and covered the body on the stage. Softly they carried it away.

Every eye seemed turned on them as they walked unhindered through the immaterial images that were dashing madly about on the stage, noiseless, unreal.

Then Bruce began to laugh, softly and with such genuine merriment, that Dr. Grant turned to him with a face suddenly whiter and more drawn than before. Bruce looked up at him with a smiling, teasing face. There was nothing insane in that face.

"No, I'm all right Grant. Everything's all right! You see, just for a moment I wasn't thinking, because everything was so concentrated on that hope of bringing Lora out of the fortress that way. But just think—look."

AGAIN Bruce was at the controls. In an instant the scene had shifted, it was Lora's cell now, the girl stirring slowly to consciousness on her bed. Bruce projected himself, and his image bent over by the side of Lora's bed.

"Lora," he said, "Lora dear—it's Bruce." Slowly the lids raised, the long lashes curved upward.

"Bruce—the joke worked, didn't it?" She paused, suddenly fuller consciousness returned, and the laughing glint in her eyes changed. They were suddenly very intent and thoughtful. "Bruce, what did you call me?"

"I called you Lora—Lora, dear. Do you mind?"

"Oh—," sudden animation came to her. She sat up abruptly, clutching the blanket to her. "Then—then I'm not—your laboratory assistant."

Bruce laughed softly. "I suppose you are—but that's not all, you see."

With that point settled, other things could reach Lora's consciousness. She saw for the first time the steel bars that had been there when she dropped off into the long sleep. "Bruce—where am I? In the same place?" There was fright in her voice now. "I've been here two days? You couldn't get in?"

"Not till five minutes ago, Lora. I have now, though. I can transport matter entire by the process, transport it as far as I can project an image of normal size."

"Then you can get me out?"

A cloud came over his face. "No, Lora, I have tried it, and it won't transport life. Dr. Grant says the forces involved are too mighty for life to endure. I tried once, but—but the experiment failed. It's all right though, because you see, dear, no substance in all the Universe can endure these forces. See, your bars." Bruce's image vanished from the cell, but there was a sudden enormous tension, a tension that seemed to draw at her very soul. Quietly, without a sound, the great steel door dissolved away—quietly as the noiseless ships of the Freedom Union—the quietness of the Matter Giant at work.

Bruce reappeared. "I have other work to do with this now. Omallin wouldn't surrender. I couldn't break down his magnetic defenses without rocking earth to her heart. So now I must leave you for a brief while, dear, while I finish the work. I will bring you a white robe of the Freedom Union, and a telescoposcope, and the twin tubes before I go though."

He melted away again, and where he had been, a white robe, a small telescoposcope, and the twin pistols of the Freedom Union came gently into existence. Laughing in her heart, Lora rose, and went to them.

Fat Omallin was quivering and ordering and shrieking threats and vengeance. Two score Polshins, most of them young Polshin Guardsmen, were watching the performance with growing signs of disgust. The more Omallin realized their feelings, the more their barbs penetrated his thick intellectual hide, the more he disintegrated. His eyes were wide and frightened in their folds.

Gradually a cold silence fell about him, and his voice died slowly into silence too. Steady, hard-eyed gazes were bent on him. These young men saw in him for the first time the weakness and degeneracy that he represented.

A low voice spoke. Spoke from the air. "Disgusting performance, Omallin. It won't do you any good anyway. I told you I could crack that nut-shell of yours anytime I wanted to. Omallin, will you come down to the power-room with me?"

O MALLIN shrieked as a solid something pushed him gently. Fast as his fat legs could carry him he ran for his own private room. A solid something turned him aside at the doorway, pushed him, forced him toward the power room. Whimpering, his face glazed with a cold sweat, he was forced along. There was solidity in the image now, not absolute solidity, but enough to force him.

Behind him trailed some forty-five Polshin Guardsmen. Down the corridor they went, then down an elevator that mysteriously took on volition of its own, down to the depths beneath the ground level, into the lowest level of the N'yak Fortress. There was a great, smooth, humming roar here. Rivers of cold water, nearly five million gallons a minute, were rushing through the huge pumps. The great atomic generators hummed and chuckled softly to themselves, the half-dozen Polshin War-

techs, who ran them, seeming tiny among their grey bulks. Long silver columns led across the vast cavern to apparatus on the same Titan's scale.

"I didn't want to do it," said the voice calmly," because we would have wracked old Mother Earth in the doing. So I'll do it this way. I'll take Burner I of bank, A first, I think—"

Bruce wasn't gentle this time, and besides, instead of merely bringing it back to the N'yak Hall, he was throwing it away, out in space a hundred thousand miles from earth. The soul-wrenching tension built up, and suddenly there was a terrible, ear-tearing scream, the scream as of a living animal in pain, almost—

The outlines of the first of the great generators faded away, in its deep interior they could see the burning fires. Then—the fires blossomed in a sudden explosion of heat and light for the billionth part of a second, a vast flower of blue-violet flame.

Then there was nothing. Only the thunderous roar of the air rushing in to fill a sudden vacuum.

There were ten of those thunderous roars. Ten times the whole vast N'yak Fortress shuddered to them and in her cell fifteen floors above, Lora smiled as she heard them. Brucé was not being gentle, as he tore the living heart out of the N'yak Fortress.

"I think you'd better start back," said Bruce. "I'm going to take two of the pump battery now." Omallin realized suddenly that the solid thing had released him. His legs pumped desperately up the ramp to the elevator. It would still work, as the lights still worked, for the accumulators remained, intact and charged. Behind him he heard again two roaring blasts—and a new sound. The sound of thundering, rushing water. Water draining in the opened forty-foot ducts from the Hudson and the Atlantic.

Presently, as the elevator, loaded to capacity, began its slow rise, Omallin heard the crackle and spit of shorted electrical circuits.

His face was pasty when he stepped from the elevator at his own level. The Polshin Guardsmen were still with him.

And—the voice was still with him. It was hard now. Hard and grim and stern. "Omallin, I wanted you to see that, and to know your power was definitely crushed. Omallin, you are something so savagely, horribly monstrous, so utterly inhuman and beyond human consideration, so far gone in the depths of the degeneracy, the worlds *need* you. You should be preserved for all time, so that men may know what they can fall to."

O MALLIN didn't get the sense of what Bruce said. He only heard "the worlds need you" and "preserved for all time," and a look of cunning hope spread over his face. The eyes slitted once more—perhaps a bargain remained to him—life and Plehb girls too, perhaps—

His face remained that way. Bruce saw it, and realized that never again could he hope for so perfect an expression. A terrible tension built up in the room, a tension that leapt and crackled in static discharges like miniature lightning, roaring and snapping, driving back the Polshin Guardsmen from about Omallin. And Omallin remained rigid, the same expression fixed on his face. But slowly, something was happening to him as the Matter Giant tore and strained and pushed at the atoms that made him. He was shrinking, and his color was fading. Slowly he shrank, and slowly the color faded, and a strange luster came, a dull silvery luster—

Three minutes passed before the tension vanished, and the shrinking stopped. Then—Omallin stood on the floor.

On his face was the same expression of leering, cunning lust, the same fat jowls and pouched eyes. But there was no color in the face, and it was a face gleaming with a dull, smooth metallic luster. And Omallin stood only some few inches tall, but he was really quite valuable, even in those days, for he was solid iridium, every atom of him, and he weighed two hundred and ninety pounds, just as he had before.

Forty-five Polshin Guardsmen, their faces as white as the metal face of the statuette that would endure for untold millenia unchanged, uncorroded, stormed down the wide hallway—anywhere away—

Epilogue

JOHN MONTGOMMERY'S age-old eyes, in their setting in his fresh, youthful face, were burning with a light of happiness. Bruce Lawry and Lora stood before him on the platform of Interplanetary Hall at Mars Center. Beside them stood a telescop, and on its stage was an image of Freedom Hall in N'yak, one hundred and thirty-seven million, five hundred thousand miles away.

"You, Bruce Lawry, can have no conception of my feelings in greeting you officially here. You have not lived through my more than seven hundred years, you have not waited while thirty generations of men came and went about you, waited through decades and through centuries hoping always to hear from

the planet it has been your duty to isolate from all contact with her sister worlds, waited and wondered what things were going on.

"Six months ago our scientists first announced that they had detected across all the gulf of space the tremendous force-fields you were using, and for the first time the centuries of waiting seemed insupportable.

"In the Pledge of the Planets, seven centuries ago I promised that the planets would help earth in settling her problems. I said you must come with a new ship, bringing a new invention. You have come bringing such gifts as we have never imagined possible. You have shown us exact images of planets circling a star three hundred and fifty-seven light-years distant. You have shown us matter at the heart of the sun, and matter in the very nebulae.

"And unaided, earth has all but settled her own problems.

"It is earth who should welcome us back into the intercourse of Planets," Montgomery paused. Then from the table he took a small metal key. For long seconds he looked at it, then slowly raised his face to Bruce Lawry.

"Seven centuries ago I watched while this key was cut. I wondered then how long it would lie in our vaults.

"Today I brought it out. You cannot know my happiness in giving to you this key to the Sealed Chamber. Never again will I have to pass that closed door with the memories and thoughts I have endured."

THE END

Millions for Defense

By MILES J. BREUER, M.D.

We are very glad to give our readers a story by Dr. Breuer. He will be remembered by our readers as a favorite author of many years' standing, and in the near future we shall have the pleasure of giving more of his works. This is one of those stories whose finale can never be successfully guessed at; you have to read it to the end.

"IT'S about time you quit fooling around and got down to some real work. You've been tinkering long enough."

The coarse, red face of Jake Bloor spread into an unsympathetic leer, and he grunted contemptuously.

"I promised your mother I'd put you through school," he continued. "Now I'm through with that, and a big bunch of boloney I call it."

That was the welcome that awaited John Stengel after graduation from college, upon his arrival at the only home he had, that of his uncle, who was a banker in the small country village of Centerville.

"Yes, sir," replied John, biting his lips.

His uncle screwed his lips into ugly rolls around his cigar, and then took it out and spat on the floor.

"This job I'm giving you in my bank," he went on, "is not a part of my promise to your mother. That comes out of the kindness of my heart."

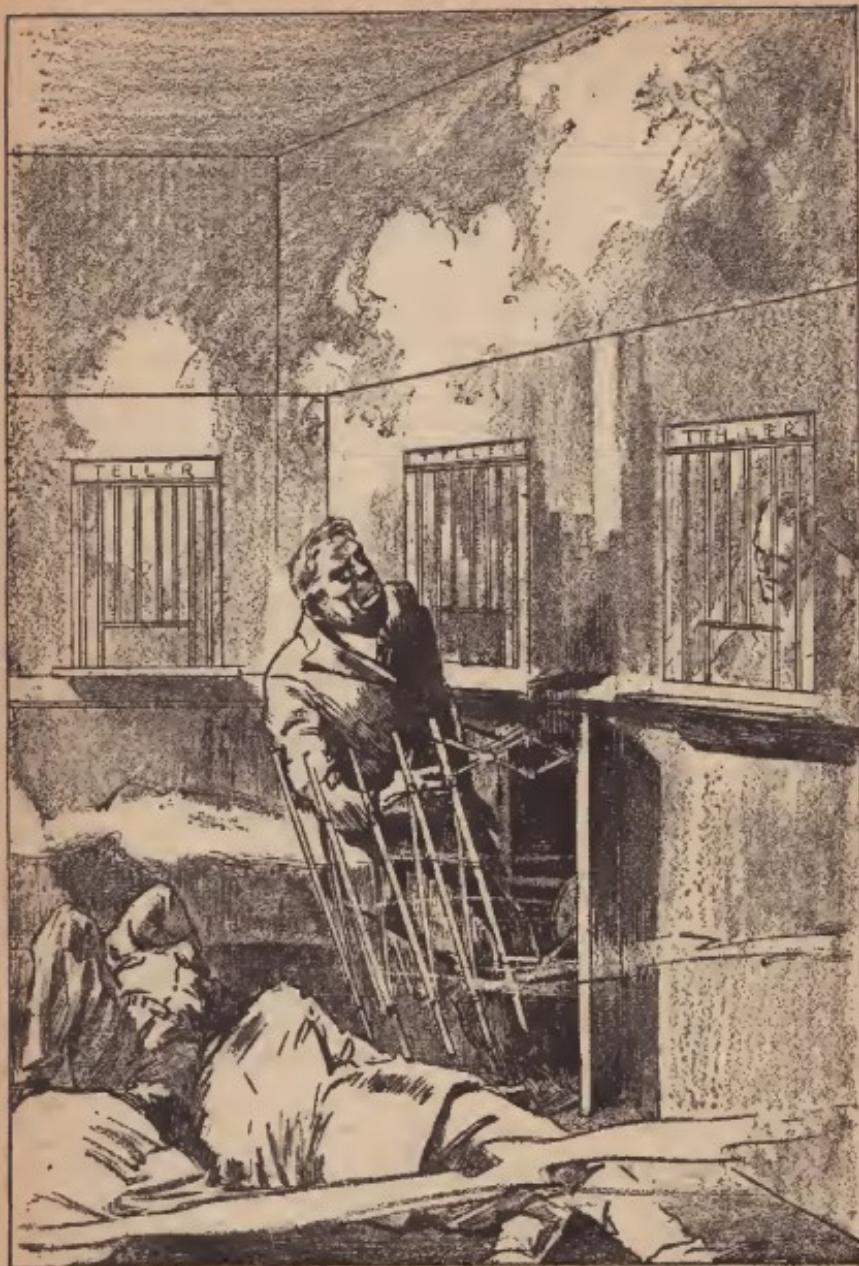
That mind can and does triumph over matter was demonstrated again by the fact that John did not turn on his heel and walk out of the house, never to return. John Stengel, known to his fellow-students for four years as Steinmetz Stengel, stood five burly inches above his stocky uncle; his blue eyes blazed a resentment that was every-

where else concealed by his quiet and respectful bearing. The powerful arm that bent to run his big hand through his yellow hair, could have knocked his corpulent uncle off his feet, but it dropped quietly at his side, and he again said:

"Yes, sir!"

For, graduation is a bewildering experience. The world is wide, and one is not sure just which way to turn. A fifteen-dollar a week job as a clerk in a country bank was nevertheless a discouraging jolt to the rosy aspirations that flowered at this time of the year, quite as brilliantly as did the roses; for behind him were four splendid years of distinguished achievement as a scientific student.

However, just now there seemed no way around it. The offer of this job from his uncle had come several weeks before. Jake Bloor had not presented it kindly nor gracefully; he had rubbed it in with patriarchial magnanimity, and with conspicuous contempt for John's scientific training, which he had permitted only because of his promise to his dead sister, when she had placed the child John in his hands. During the weeks between his uncle's offer and the date of graduation, John had thought hard and tried everything. Especially he had discussed the problem with his fellow-students and his instructors.



He saw kicking, struggling, writhing, screaming figures rolling on the floor, and just in front of his teller's window his uncle was squeezed flat in a cage of bronzed bars.

He had nothing else to fall back on. His parents had died when he was a child and left him nothing but the ill-natured promise of a grumpy uncle. He had tried in vain to get a position of any sort; but the country was in the grip of the most severe financial depression of the century. No positions were available anywhere. His failure to locate anything in the way of a livelihood, after several months of correspondence during his last year of school, was not surprising, with ten millions of unemployed in the nation. The bank-clerk job, even though it was offered largely as an insult to John's scientific training, seemed like a straw to a drowning man. It had occurred to John that Jake Bloor was prosperous even while other country banks were failing.

"YOUR uncle seems to be a good business man, and it will do you no harm to learn something about business," one of his student friends said to him.

"Keep up some scientific reading," the Dean of the Engineering Department said to him, "but by all means take the job. Keep your laboratory hand in practice somehow."

The Dean was much interested in John's future, and consulted with John at length about the matter.

"You will get there in the long run," the Dean said; "but do not permit yourself to become stagnant."

The suggestion of John's roommate, who was as brilliant and clever an engineer as John himself, seemed to offer the most promise of interest.

"These country banks simply invite robbery," Bates had said. "Perfectly simple to walk in and help yourself—"

"You mean that I ought to rig up some stuff to protect the shack in case of robbery? Good idea!" John was interested.

"Easy enough, wouldn't it be? And a good way to amuse yourself."

"And Hansie, dear," Dorothy had said to him, "I know you can do something great no matter where you go. This is only temporary, and we'll be patient, and some day we shall have that home together."

Dorothy was at the same time the Light of the World, and the hardest problem of John's life. They had decided that they could not live without each other; and yet here they were, finding it impossible to live together. But, as Dorothy held on to his arm, walking with him across the campus in the moonlight, and held her soft, brown head close to his and gazed at him with limpid, sympathetic eyes, John felt that he could and must accomplish anything in the world for this wonderful girl that a kind Providence had given him.

Centerville was certainly a drab and dismal place, after the glitter of life on the campus, whose great, picturesque buildings had thrilling things going on in them. Here there were half a dozen tiny business buildings strung out along two sides of the dusty highway, and a score or so of cottage residences scattered about, and beyond those, monotonous prairie in all directions.

There were two general stores; the one in the brick building was carelessly run and had a poor stock; the other was better arranged and more ambitious, but its wooden, gable-roofed shack looked almost ready to collapse in upon it. The garage was the busiest and most systematic-looking place in the neighborhood. Two "cafés" (in reality soft-drink parlors), one ragged and catering to coarsely dressed men, one somewhat cleaner and filled at noon with high-school students; a hardware store with dirty windows and a heap of nondescript junk within them covered with the undisturbed dust of years; a drug-store with

its window full of patent-medicine and cosmetic posters mottled by fading, all gave John an indescribably dreary feeling of lostness and futility. The traffic that slipped down the highway all day, and the color and activity of the two filling stations, Standard Oil at one end and Conoco at the other, did but little to relieve him.

The bank itself made John think of the little toy banks that children play with; and when he first set eyes on it he was sure that it must have a slot in the top to drop nickels in. It was square, somewhat larger than a garage, with white-painted drop-siding and a flat roof. Within, it had iron bars across the windows, a single room divided in two by a counter with a rusty iron grill, a big iron safe set on wheels. The floor was unpainted and splintery; the ink in the bottle on the sloping-topped table at the door, was dry and caked, and the pad of deposit slips upon it was yellow and curled with age. Hardly anyone passed along the little street all day, and only rarely stepped into the bank itself. Between two and three in the afternoon there were a few merchants; Saturday evenings there might be three or four farmers in the bank all at once.

JOHN smiled when he first saw the place. Providing there were anything to take, it would be the simplest and easiest of tasks for the modern bank-robber to clean the place out and get away. It certainly looked as though there might be something to take. His uncle Jake Bloor's huge, sprawling, white house brooded over the village like some coarse temple; and his big, throbbing cars glittered back and forth from the city, boasting insolently of money. It seemed especially insolent to John, because he knew there were countless unemployed who did not know

where their next meal was coming from, and countless others who were ground almost flat to the earth by debts and losses at this particular time, while his uncle lorded it about without a care in the world nor a thought for others. It did not seem fair that this crude, heartless man, who had never done the world any material service, but had only selfishly pinched off for himself generous portions of the world's money which he had handled, should be rolling in safety and luxury, at a time when men who had invented and built and taught and organized were being faced with grim want. Things weren't right in the world.

John was young and human. We cannot blame him, therefore, for the fact that when he did eventually get to work to devise some scientific means for preventing a robbery of the bank, that his motive did not consist of any overwhelming loyalty to his uncle's bank. He did it merely because he took pleasure in the creation of something that would operate. The abstract idea in the mind, when the concrete working out of it does things that can be seen and felt—that is the thrill of the creative spirit. John loved his figures and his drawings; he loved the coils and the storage batteries, the clicking little gears and the quick little switches that tickled and made swift little movements of their own accord, as though they were living and intelligent things.

For many long, luxurious weeks he did nothing; it was a delight to be merely a sort of vegetable; to rest from the rush of the last weeks in school; to shed completely, if temporarily, the strain of looking into the future. His mind hibernated during that time, and lay fallow; for it required no effort to discharge his simple duties as clerk at the bank; and life in Centerville was an excellent anesthetic. His body made up

what it had missed in exercise by long walks down the highway and along the railroad tracks. Long letters to and from Dorothy punctuated the soothing monotony, and the thrill they gave him was all the excitement he wanted. They must have been good letters, as we might have judged could we have but seen him slip off into solitude on the first opportunity after their arrival, his face breaking out in delightful smiles—only no one saw him.

Finally, one day in the fall, after the heat of the summer was out of his bones, he began to get ambitious. First he put a coat of bronze paint on the rusty window-bars and on the grill-work of the counter.

"Looks like a new place in here," said old Larson, the town constable, who was the first one to come in and see it.

John smiled.

"I believe my sixty cents' worth of paint will boost the confidence of the bank's depositors thousands of dollars," he bantered.

Jake Bloor guffawed when he came in and saw it.

"All right!" he sneered. "If you want to waste your pennies that way in this dump. But I think you're a damned fool!"

This was not very encouraging, thought John, for broaching the idea of installing some equipment for protection against robbery. He decided to say nothing about it for the present, and await a better chance.

A week dragged out its length after that, and John began to get restless. The autumn coolness was beginning to be stimulating and after his most excellent rest, John wanted to be up and doing something, using his hands and his brain. The matter of devising some protection against robbery in the bank was constantly on his mind. He turned over in his head various projects. He

watched his uncle, constantly hoping for a chance to mention the matter.

THEN one morning the city daily came in with two-column heads about the robbing of the bank at Athens, forty miles away. Three masked men had walked into the bank in the middle of the forenoon; one had forced the clerk to hold up his hands at the muzzle of a pistol, while the others had cleaned out the safe, gotten into a car, and disappeared. Eighty thousand dollars worth of cash and negotiable securities had vanished. No trace of any kind could be found of the robbers.

"I could rig up some stuff to prevent that sort of thing in your bank," John said, forcing his voice into a casual tone over his pancakes.

"Prevent what?" growled his uncle.

"Your bank being robbed, like the one at Athens," John said.

"Oh!" and a couple of grunts from the uncle.

"Doesn't it worry you? It might happen to us, you know." John was showing anxiety in his voice—whether for the fate of his uncle's bank or in his eagerness to be at some technical work, again, he could not tell.

"Oh, I suppose." And Jake Bloor went on reading.

"Do you mind if I fix up some apparatus to protect you?"

"All a bunch of humbug!" Jake Bloor exclaimed impatiently, gnawing at his cigar. "The swindlers are always after me with the stuff. They want to sell something, that's all."

"No. I don't mean for you to buy anything," John urged. "I'll make it myself."

His uncle roared derisively.

"That would cost more than ever!"

"It wouldn't cost you a cent!" John explained, holding down his anger with

difficulty. After a moment's silence he regained his control.

"If you don't mind," he continued, "I'll fix it up for you at no expense to yourself."

"You're a damn fool!" Jake Bloor sneered. "But go ahead and have your fun. Only look out and don't do any damage. That's all I care about."

He got up and walked out of the house. In the door he stopped and snorted back at John:

"And don't kid yourself too much. Those fellahs are on to these tricks. Before you could kick off your alarm they would have you shot. Better take care of your hide."

John thought it over as he walked to the bank that morning.

"If he invites robbery, I ought to let him be robbed," he thought. "But, if he should be robbed, as it is probable that he will be, his bank being the richest as well as the most rickety for a long distance around, where would my job be? And, as four months writing of applications all over the country hasn't got me an answer, where would I be without a job? Seems that it is up to me to protect the bank whether he wants it or not."

Then his mind turned to the technical parts of the problem and began to run quickly about among them.

"I believe he is right, too," he thought, "about kicking off an alarm under the counter. That is an old dodge, and the robbers are probably ready for it. There must be a way around that."

For a solid month John was happy. He was the same old Steinmetz Stengle, whom his fellow-students gibed at, and at the same time loved so well, going about in an abstracted gaze, studying some complex problem in his head, or spending every spare moment of the day and many hours at night with the slide-rule and drawing-instruments, and

with tools and materials, giving some astonishing child of his brain the outward concrete form that was necessary to make it a visible and functioning thing among men. Packages in corrugated paper and wooden boxes arrived for him at the little railway station; and there were a few automobile trips to the city.

When the thing was finished, it differed vastly from the usual burglary protection equipment. Nevertheless it was quite simple. The keynote of it was a row of photo-electric cells just above his head, which received daylight from the window behind him, and permitted a steady flow of current from a storage battery, whose charge was maintained by a trickle charger from the lighting current. This storage-battery current held down a relay armature. Anything that cut off the light from the photo-electric cells would shut off the storage-battery current, release the relay, and set off the works.

WHEN he had gotten it made thus far, he tried it out several times by raising his hands above his head while he stood at his window, as though he were facing a bank's customer.

"Hands up!" his imagination supplied the robber's command.

His hands went up; there was a click, and the three one-quarter-horse-power motors began to whirr.

The usual device in the country bank is a big alarm bell on the outside of the building. This had been a conspicuous failure in a number of recent robberies in the neighborhood. Those who were summoned by the alarm came too late or did not have nerve enough to interfere. In one case the accomplices on the outside had found it a convenient warning to help them get away, and in another they had held all the arrivals at bay, and made a good getaway with the

booty. John discarded the idea of the alarm bell to awaken the village, and looked for an improvement on it.

A drum of tear-gas supplied the solution. One of the motors operated by the relay was so arranged as to shoot a blast of tear-gas right across the public side of the bank room, just where the hold-up men would be standing. A telephone-pair to the city fourteen miles away, rented at two dollars a month, comprised the next step; over these wires he arranged for an automatic signal in the sheriff's office, which would announce that the bank was being robbed, just as soon as the storage-battery current was cut off by the raised hands in front of the photo-electric cells.

A second motor set off by the relay, located in a box under the building, closed the outside door and shot an iron bar across it to keep it closed. John also reinforced this street door by screwing to it a latticework of iron straps and painting them neatly.

He felt highly thrilled the evening that he gave the apparatus its first trial. He tried it after dark, and therefore had to put a strong electric-light bulb into the street window to replace daylight, and instead of tear-gas he used a drum of compressed air. He rehearsed the whole scene in his mind: the door burst open by masked men, the pistol stuck in his face, and demand: "Hands up!" He put his hands up in as natural a manner as possible, and his delight knew no bounds to hear the relay click, so softly that no one not looking for it could possibly have caught it; he was even moderately startled at the sudden loud hiss of escaping air, and the street door slammed shut in a ghostly manner. He walked around in front of his window in the latticework on the counter, and felt the compressed air from the tank still blowing right across the place where the imagined robber was standing.

That ought to have been enough. It was amply sufficient to take care of any robbery that might have been staged. But John had a third motor at hand and some vague idea in his head. There was still something lacking, though he could not quite put his finger on the lack. For several days he was uneasy with the half-emerging thought that there was still something that he ought to add to this. But, try as he might, nothing further occurred to him. The arrangement, as he had it, seemed to be enough, and that was all he could think of.

He therefore demonstrated it to his uncle one evening. Jake Bloor said nothing, which was unusual for him. He was rarely silent. It may have meant that he was impressed; it may not. He did manage to keep the contemptuous look on his heavy red face. But he walked out without having said a word. The next morning he threw the newspaper sneeringly across the table at John, who was eating with his head bent down, thinking of Dorothy. John glanced at the captions announcing that another bank had been robbed, and that the bank clerk, who had been in league with the robbers, had handed out the booty and was also under arrest.

"Good idea!" drawled Jake through his nose. "Combine that with your plan. Load up the robbers nicely and then turn on your tricks. With a gas mask you can take the swag off them and hide it before the police come——"

JOHN heard no more. His mind was busy again. He saw the danger to himself. And, as never before, he observed the paltry meanness of his uncle's character. There was some deep subtlety in Jake Bloor's sarcastic persecution of the earnest, ambitious boy, which John could not comprehend. That Jake hated John seemed to be clear. But why? And

why had he gotten him there apparently at his mercy for the purpose of getting him into trouble? The only thing that John had to go on was that his uncle's old, patriarchial conception of the "honor" of the family had been hurt when John's mother had run off and married a poor but clever mechanic. That was in the eyes of all her relatives a mortal sin, not even possible of expiation by her unoffending son.

But, John's mind ran more to mechanisms than to the tangled personal relationships of the family. A few days of hard thinking convinced him that there was only one way to protect himself, and that was to include himself in the field of the tear-gas. He would have to take his medicine at the same instant as did the rest of them. One October afternoon, out on one of his walks, he strode down the highway into the dusty sunset, and ahead of him a farmer was raising a tremendous dust in a field, getting together, with a horse hay rake, a lot of old weeds for burning. As the farmer moved his lever and pulled his lines, the row of curved steel tines beneath him poised and waited, and then pounced upon their prey, and John got an idea. He thought of a use for his third motor.

He was soon busy again in his improvised workshop, putting together two affairs that resembled big hayrakes, each as tall as a man; but the tines were of rigid steel, and when they closed toward each other, they could grip a man as tightly as a huge steel claw, and hold him immovable. He installed these, one on each side of his teller's window at the counter, with the motor under the floor so arranged that it could rotate them against each other and slip them past a catch which would lock them firmly together. When the photo-electric relay went off, anyone standing in front of the window would be raked in, clutched, and held in

a steel fist, six feet tall. Yet, when these claws were turned back out of the way, painted with bronze paint, they mingled with the bronzed grillwork of the counter, and were hardly noticeable.

For some time Jake Bloor had' been talking of taking a trip West for a several weeks' stay. There was no mention of the purpose of the trip, and it was discussed in a sort of secretive way, causing John to half suspect that his uncle might be bound on a bootlegging expedition. But he cast it out of his mind, considering that it was none of his business. He was too worried anyway, to think of that, by Jake's stern admonitions about bank affairs.

John was thoroughly frightened for Jake Bloor held him closely responsible for the veriest trifles as well as for the largest affairs, and yet had not properly inducted him into an adequate knowledge of the bank's affairs. It was an unfair position for John, and he felt like a blindfolded man walking a tightrope across a chasm; he was just trusting to luck that nothing went wrong before his uncle returned.

"Don't pass up any good loans," his uncle growled at the breakfast table on the day of his departure. "But, if I find any rotten paper in the vault when I get back, I'll wring your neck."

John said nothing, but was determined in his mind to loan nothing, and sit tight waiting for his uncle's return; for he could not tell good paper from bad. His business was engineering.

"I'll stop at the bank yet before I leave," Jake said, with an air of thrusting a disgusting morsel down an unwilling throat.

About the middle of the forenoon, the loneliest time of the day, John heard his uncle's car drive up in front of the bank. He could see suitcases strapped to the rear of it. Two men walked into the bank along with Jake,

one of them carrying a large suitcase.

Jake Bloor drew a big pistol and levelled it at John with a sneer.

"Well, let's see how your plaything works," he said in a hard, ironic voice.

John protested vigorously.

"Tear gas is no fun——"

"DO you suppose I really want a dose of it?" his uncle roared. "Don't you dare put up your hands. Keep them on the table where I can see them. No kid tricks, either!"

His grim harshness now alarmed John.

"I'm more afraid of that big pistol than of the gas," John protested again. His voice stuck in his throat, and lights danced before his eyes; the whole business was such a shock, that he could not puzzle it out, though his brain roared like a racing motor in the effort to make head or tail of it. "That thing might go off and hurt somebody."

"Damn right it might!" his uncle growled. "That's why you had better be careful and not play anything on me. Keep your pretty hands still, or I'll ruin them with a bullet. Now, turn around, march over to the vault, and bring me the tin boxes with the cash and the bonds. ——Go on, damn it! I mean it!"

Jake snapped the hammer of the revolver, and John turned with considerable alacrity and went after the tin boxes of valuables in the safe. His face was pale and his hands trembled. The weakness of his ingenious plan was being shown up unmercifully. His uncle had no learning, but was diabolically clever in a practical way. John now expected to be the butt of his cruel sneering for weeks to come.

"I guess you win," he laughed nervously at Jake. "I give up. My apparatus was no good, and the laugh is on me."

Jake stamped violently on the floor.

"By God! I told you to get those boxes of bonds and cash. If you think I'm fooling, you're due to learn something in about ten seconds. This bank is through, do you know it?"

John reasoned rapidly. The only thing to do was to go ahead. If it was a joke, it would be interesting to see how far it would be carried. If it was not a joke, what else was there to do anyway? After all, life on nothing with no prospects was still considerably better than a bullet through his vitals.

"And don't touch anything, and keep your hands down low," Jake reminded him with a thin ironic leer in his voice. "If you don't believe I'll shoot, just try something."

Like a magician on the stage, anxious to show that he has nothing up his sleeve, John avoided touching anything but essentials, and touched these clearly and gingerly. He handed over some \$200,000 worth of negotiable valuables from the safe, truly a princely sum for such a tiny bank. The idea occurred to him when it was too late, that he ought to have had some sort of trip or switch or button in the safe itself. That is, if it were really too late. Perhaps this was just a good chance to discover the defects of his apparatus and elaborate upon it. If this were only a test, he was certainly learning rapidly. His head was already full of improvements, and he was willing to forgive the grimness of the joke for the help it afforded.

The two other men held John covered with pistols while Jake Bloor stowed away the tin boxes in the suitcase.

"Now," Jake said again in that offensive, thick-lipped sneer, "I suppose you have been wondering how I am going to get out of here and keep you from pulling something. Well, it's like taking candy from a baby."

He approached the window again.

"Keep your hands down on that desk!" he commanded.

Jake Bloor took out his pocket knife and went for the wire that was concealed on the outside of the cage.

"Lookout! Don't——cried John in alarm.

"Ha! ha!" Jake thoroughly enjoyed his big laugh. "You thought I was too dumb to notice that this was your main feed wire from your battery under the floor, to your little light bulbs. Ha! ha! ho! ho! Your old uncle's not so dumb!"

"But——" John tried to protest again.

He was too late.

"Shut up" his uncle barked sharply, "and keep your hands down."

"O. K., joke or no joke," thought John. "It's on his head."

He shut his eyes tightly and took a deep breath.

Jake cut the wire and yanked out a big length of it, which he started to put in his pocket. But he did not get that far with it. John heard the faint, comforting little click. There was a harsh hiss of gas. The door slammed ponderously shut and its bar clanged to. In front of the teller's window there was a whirr and a clash. Loud screams rent the air.

John could not resist opening his eyes, in spite of his knowledge of what the gas would do to them. Just for an instant, before a searing pain cut fairly into them, he saw kicking, struggling, writhing, screaming figures rolling on the floor, and just in front of his teller's window, his uncle was squeezed flat in a cage of bronzed bars, unable to move but only to give general twitching. Then John got down slowly and lay on the floor, because of the stinging in his eyes, nose and throat.

A thousand swords burned into his eyes; he sneezed and coughed and felt

so miserable that he could neither remain on the floor nor stand up; he kept squirming and writhing about. He could hear the others groaning and writhing about and kicking the floor, and the loudest lamentations came from his uncle, hung up between the steel rakes. But no attempt that he could put forth was able to get his eyes open, which, in spite of his pain, he regretted. At that moment he would have given years off his life for a sight of Jake Bloor pinned up against the counter and gassed with tear gas, holding on to his suitcase full of money.

It seemed a hundred years of flashing, stabbing misery before relief came. Actually it was twenty minutes after the breaking of the wire when the sheriff from the city arrived with a car full of armed men. During this period, no one in Centerville had awakened to the fact that anything was wrong at the bank. John felt the breath of cool, fresh air, and strong hands lifting him. He was too dazed to pay attention to what was going on, and submitted when medicine were put down his throat. He was in bed for two days before he could get about properly.

On the morning of the third day his uncle came into the room. A burly man walked on each side of him. In fact, his uncle hardly walked; he was principally supported and pushed forward. Behind them came Dorothy; darting around in front of them, she had hold of John's hands.

"Johnny-on-the-spot!" she laughed, and kissed him in front of all the others, thereby embarrassing him tremendously.

But John had not missed the look of anxious concern on her face for an instant when she first came into the room, and before a quick glance told her that he was in good shape. He was grateful to Providence for her.

His uncle shuffled up to the bed.

"You're fired!" he attempted his quondam roar, rather anticlimactically. He looked very much used up.

"Tush! tush!" one of the big men said. "We can't fire that boy. We still need him." He was softly sarcastic about it.

John looked at them closely. They were certainly not the furtive creatures who had come into the bank that forenoon with Jake Bloor. In fact, he could see the edges of shiny badges peeping out from under their coats. It was only too obvious that Jake Bloor was under heavy arrest.

"But what I want to know," one of these big, official-looking men was saying, "is how you set off your stuff? This guy says he had you covered and that he cut your wires and pulled a section out of it."

John laughed heartily and long.

"My uncle is clever," he said, when he could finally speak; "but he missed a slight, though important fact. That wire supplied a current from a storage battery, and as long as that current kept running, everything was peaceful. It was the *breaking* of the current, either by shutting off the light to the photo-electric cells by hands up, or merely by cutting the wire, that set off the relay and turned on the tricks."

"Oh-h-h!" said Jake Bloor faintly.

"I tried to tell you——" John began.

"Never mind," one of the big men said. "We'll tell him. But now we want you to come to the bank."

John dressed and went to the bank, where he again found his uncle and the two men. These two showed a persistent fondness for close proximity to his

uncle; they would never permit him to move more than a few inches from their sight. There were also two smaller men going over the books.

"As I thought," said one of the latter. "Flat failure!"

One of the big men shook Jake.

"**S**O you had the balloon punctured, and were ready to skip," he said quietly. "That won't sound good to the judge. Well, anyway, there's enough cash in your bag to pay off your depositors with—unless we have to divide it among those of the other banks he has robbed around here."

"Robbery and embezzlement both," said the other deputy. "That'll be about a hundred years at Leavenworth."

He turned to John.

"You will be required for a witness, so stay where we can reach you. I understand that the loss of this job is tough luck for you. Well, here's hoping you have no trouble finding another."

They all went out, bundling Jake Bloor with them. John and Dorothy were left alone in the bank.

With startling suddenness, the telephone rang shrilly. It was long-distance calling from the city.

"Are you the young man who devised the apparatus that caught the robbers in this bank? This is the Palisade Insurance Company, and we need somebody like you on our staff. Can you come into the office and discuss the details of your position? Thank you."

John and Dorothy looked into each other's eyes. That home of dreams was becoming a reality at last.

Zora of the Zoromes

By NEIL R. JONES

In presenting another of Neil R. Jones' "Jameson" stories, we are acceding to the desires of many readers who have expressed the wish for more of Professor Jameson and the Zoromes. Again we are with these strange beings and we follow Professor Jameson in his adventures with them, who seems to be quite content with the strange society with which fate has thrown him into contact.

CHAPTER I

Princess Zora

"AND we left the region of dead worlds and cooling suns, crossing space to Zor," Professor Jameson concluded.

"With no adventures between the time you left the sunless world and your arrival here?" asked Zora.

"We made several stops in the few systems we passed, but nothing outstanding befell us, nothing worth the telling."

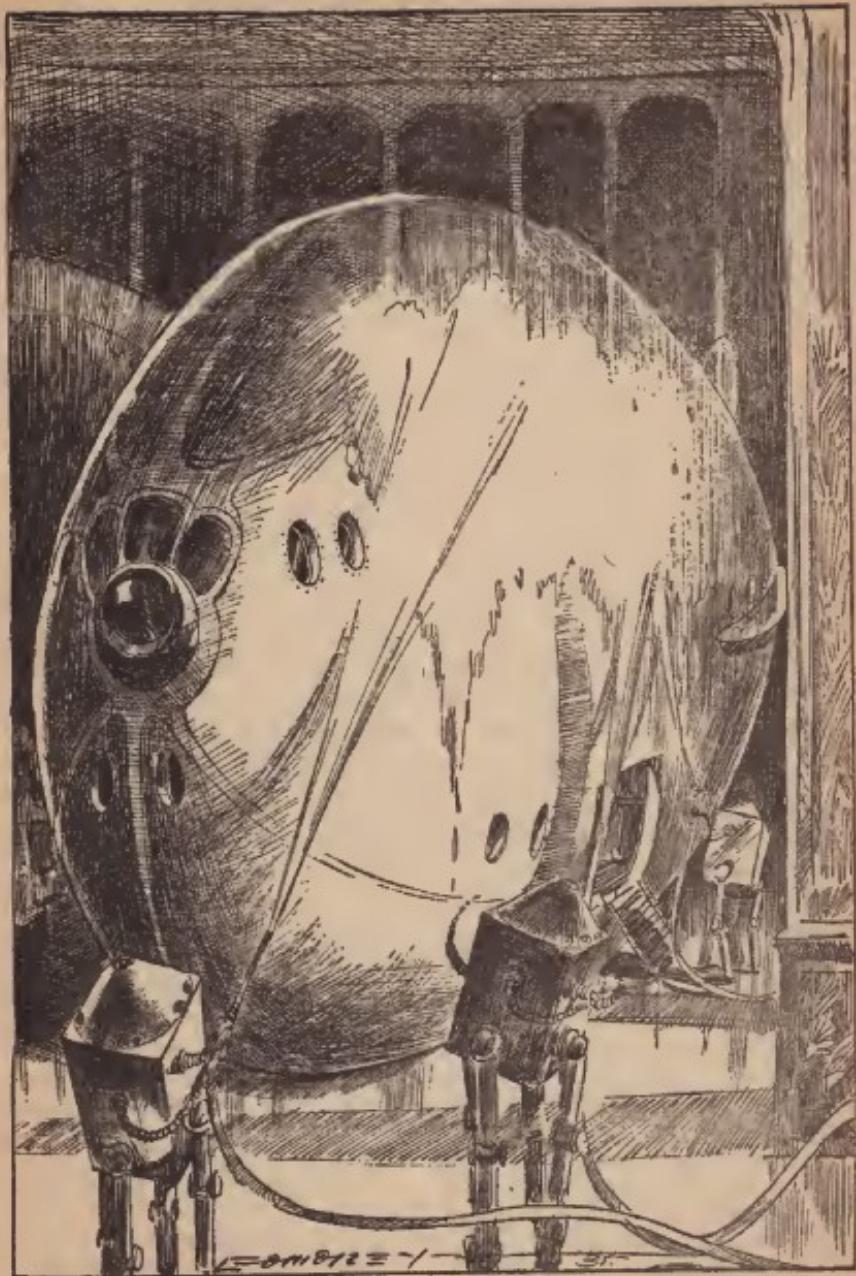
Princess Zora of the Zoromes turned her head and looked far out upon the distant horizon away from the apex of the mighty citadel on which she sat, listening to the adventures of this fascinating convert to the ranks of the machine men of Zor. She was a sentient, flesh and blood Zorome, representative of the species from which the brains of the machine men were taken. Zora had many years yet to live before the official time arrived for the transposition of her brain to a machine body. Zor maintained a propagating species to replace

the expeditions of Zoromes that never came back and renew the numbers of those depleted expeditions which did return. The machine men who had gone forth under the leadership of 25X-987 and returned under 744U-21 had finally reached Zor, the home world.

The machine men discovered that they had been gone for more than twelve hundred of 21MM392's earthly years. Most of this time had been spent near the planet of the double sun, where more than half of the expedition had been killed, the remaining Zoromes were marooned there for centuries.

Professor Jameson, convert to the machine men, the last representative of earth's long dead civilization, found himself with Princess Zora MCXII to whom he was relating the adventures and discoveries of the expedition, she in turn explaining the mysteries of Zor and its sister planets to the interested professor.

"21MM392, you have told me how 25X-987 and his expedition found your dead body in the shadow of the dying world and removed your brain to one of the machines, stimulating your men-



Some of the Zoromes remained in the two ships which were just disappearing under the layer of gushing substance applied in red-hot streams from long nozzles held by machine men, tubes leading off into the heart of the building.

tal processes into life and activity once more," Zora radiated. "You have related how half the expedition was wiped out by hypnotic impulse on the planet of the double sun; I have heard your story of your seven centuries of cosmic solitude in the wrecked space ship, waiting for the tripods to come and release you; yet the most interesting tale of all you have barely touched upon. Your invasion of the blue dimension, the rescue of your comrades from the ocean pit, your adventures inside the hydro-sphere and your trip into time interest me less than your own personal story. You have finished your account of the wandering world; now tell me about your rocket satellite and how you ever came to conceive such an idea."

Zora's large eyes with their long underlashes stared inquisitively at the professor, her six tentacles undulating gracefully as she shifted herself to a comfortable position preparatory to hearing the anticipated story of Professor Jameson's interment in space.

STILL, little thoughts in the professor's mind beyond the perception of Zora's mental attunement rapidly compared her with earthly standards of pulchritude, the standard which had existed during the earlier half of the twentieth century. To staid, earthly inhabitants of forty million years past, Zora would have appeared as a weird monstrosity, yet her features, her curved, undulating lines and graceful, waving tentacles were harmonizing and symphonious to the eye.

From four pronounced callosities, two on each side of her upper body, four of Zora's tentacles grew long and tapered to tiny tips. Two more tentacles, one in front and another in back, at right angles to the flanked tentacles, completed her six upper appendages. Below this upper area of tentacles, her body

assumed vase-like proportions, then tapered to four short legs, unjointed, which curved outward from the base of her body to terminate in three-pointed feet.

Zora's head was large and stately, though not out of proportion to the size of her body. A high fringe of membranous tissue grew across her head from cheek to cheek like a thin, waving coiffure. Beneath and in front of this, below a well fashioned forehead, deep, dark eyes sparkled with curiosity. Long, lower lashes drooped over several inches of her face, devoid of what the professor would have described as a nose, the machine men knowing such a facial disfigurement, in their travels from world to world, as a proboscis.

A diamond-shaped mouth opened in amazement from time to time as the professor told his story, the tale of the rocket satellite. Zora possessed no external ears. Her faculty of distinguishing sound was located in the back of her head behind the waving membrane whose thin points arose star-like from the deep-pink fringe. Her respiration process was accomplished through tiny, valved openings at the base of her fore tentacle.

"My work of a lifetime centered about rocket propulsion, and I worked long and hard upon experiments, employing radium as a means of fuel," the professor explained in reply to Zora's question. "At the time I lived on earth, space travel was only a dream, not yet realized. Space travel came three centuries after my death in 1950."

"How do you know?"

"You forget the time bubble," the professor reminded her.

"Oh, yes--to be sure!"

"A fascinating idea arose in my mind one day, and I thought of it so often, contemplating its possibilities, that it grew to be an obsession with me, sup-

planting much of my time, at rocket propulsion, with a new type of experiment in a radically different field," Professor Jameson continued. "The absorbing study which had so completely captivated my imagination was immunity to dissolution and decomposition of the human body. The human body, I knew, like all other earthly substances, whether they were rock, air, water, metal or living matter, was subject to eventual breaking up of molecular structure into its constituent atoms. It was said in my day that should mankind cease to exist, all trace of his works, including the great pyramids and all other time-defying products of his creation, would within a hundred thousand years crumble into the forgotten past, due to the fact that subjected to planetary conditions nothing can exist forever. Of course, the readjustment of atomic structure is more rapid in the case of organic matter than it is in the case of inorganic material."

A RAY of sunlight spread shafts of fire through the membrane on Zora's head as she sat absorbed in the professor's narration. He resumed his story.

"In my search for a means by which an organic body might be preserved indefinitely following death, I contemplated many ways and means, abandoning them one by one as I realized their eventual impracticability. At first, I went about trying to discover a serum which might surpass that of the Egyptians, creating its subject indestructable to the various elements as well as preserving it intact in appearance. I gave up this idea, however, for I saw that not only would it require a longer lifetime than mine in which to discover such a concoction, but I realized that no liquid, no matter how perfect in its embalming qualities, would survive the

more violent forces of nature such as earthquakes, volcanic action and glaciers, not to mention temperature, air, moisture and minute organisms. For a time, I considered the possibilities of immersing a corpse in a great block of transparent glass."

Several airships of Zor passed low over the citadel, and the professor and Zora paused momentarily to contemplate these. Then the professor once more continued.

"I was chasing an old art. Since the days of the Pharaohs, the human race had sought ceaselessly a means whereby their dead might be preserved against the ravages of time. Great was the art of the Egyptians in the embalming of their deceased, a practice which became lost in the chaos of earth's changing history. It was never rediscovered. But even the embalming of the Egyptians was futile for the preservation of their dead down through the millions of years, their dissolution being just as eventual as the immediate cremation of a corpse."

"Tell me," said Zora. "Were there others of your kind who practiced this art?"

"England of the seventeenth century practiced a crude method of embalming to serve a grim, practical purpose. Smugglers were hung to gibbets along the coast, their bodies coated from time to time with tar and pitch to preserve them as long standing examples for other smugglers who dared approach the English coast with their illegal trade. Some of these grisly, lonely sentinels were known to stand duty for fourteen years. Their dissolution was a drawn out affair. Unveiled, clad only in rent canvas through which protruded the emaciated knee bones, these tangible spectres crumbled slowly to dust in the summer and fell away to mud in the winter. When they finally became no

longer serviceable, they were replaced with a fresh specimen.

"I finally came to the conclusion that nothing on earth is unchangeable beyond a certain limit of time, and as long as I looked for an earthly means of preservation I was doomed to disappointment. It was clear that I could never accomplish my purpose if I were to employ one system of atomic structure, such as embalming fluid or glass, to preserve another system of atomic structure when all atomic structure is eternally subject to universal change." //

HAVING arrived at this definite conclusion, I looked for a means by which a human body in the condition of death might be preserved to the end of all earthly time, to that day when the earth would return to the sun from which it had sprung. Quite suddenly one day I conceived the answer to the great enigma. It popped into my mind so unexpectedly that it left me awed, for at that particular moment I was not thinking of the matter at all, engrossed as I was in a rocket experiment. It was a wild and uncanny solution, and for a moment I looked upon it as unattainable until I came to consider it more thoroughly.

"Any material substance, whether of organic or inorganic origin, cast into the depths of space would exist indefinitely. At that time, little was known of space by mankind, yet I was certain about my theory. This stupendous idea, this wild scheme, appalled me with its possibilities. I had previously decided, that whatever solution I eventually arrived at, I would first subject myself to it in the subsequence of my death. Dead, I had nothing to lose by such a venture. Then, too, I thrilled to the pride of being the first mortal ever to penetrate the vast mysteries of the cosmic void, even though lifeless.

"I visualized my dead body flying off into the illimitable depth of space, enclosed in a rocket, perfectly preserved, while on earth millions of generations of mankind lived and died, their bones to moulder into the forgotten past, even as the illustrious Egyptian kings, even as the obscure, seventeenth century smugglers, until that day when mankind, beneath a cooling sun, would fade out forever in the chill, thin atmosphere of a dying world. And still in death I would persist, perfectly preserved.

"The thought left me gasping in open-mouth contemplation, my brain a whirl of fantastic thoughts. Then reason asserted itself, and I was no longer the imaginative dreamer but once again a cold, calculating scientist, turning over the matter carefully under the scrutiny of calm consideration. I decided to make my funeral rocket a satellite of the earth, furnishing it sufficient initial propulsion to place it well beyond the dangers of crashing back upon the earth yet keeping it well within the earth's gravitational attraction. I chose an orbit fifty thousand miles from the earth.

"My only fears were the huge meteors which careen through space at a tremendous velocity, but I overcame the possibilities of a collision with one of these stellar juggernauts by the installation of automatic repulsion rays in the rocket. These repulsion rays, I discovered in my laboratory, work only in a vacuum. This was another by-product of my experiments with radium as a space-rocket propellant. These rays from the rocket satellite worked only when a meteor approached, the proximity of the meteor exciting into action the automatic repulsion rays. A transformer, turning sunlight into radium energy, kept my satellite protected through forty million years. Whenever a meteor approached within a hundred miles or less, its immediate registration depending

largely on its size, these rays swerved the meteor slightly to one side of the rocket's orbit. In the case of the larger meteors, the rocket itself deviated temporarily from its orbit to allow the passing of these colossal space denizens.

"I left instructions for my nephew to bring my body from the grave vault at Greenville cemetery to the rocket satellite in the leaning tower projecting from my laboratory. He followed out my plans to the letter. I warned him to leave the building after he had set off the five minute timing device, and I also urged him to wait until the moon had passed that part of the southeastern sky at which the rocket tower was slanted."

"**H**OW do you know that your plans were carried out so well?" asked Zora. "It was forty million years afterward that my people found your rocket satellite and recalled your brain to life."

"That I also learned with the time bubble," the professor replied. "You will remember that on the way back to Zor, we stopped on the earth and took a trip into time."

"Tell me, what is it like to die?"

"You just lose consciousness," said the professor.

"But what of this afterlife which certain intelligent types throughout the universe constantly affirm. Do you recall an afterlife?"

"Not definitely," the professor replied, "though strange, hazy impressions were scattered about my mind like vague memories when my brain cells were stimulated into activity from their long sleep."

"Then you recall no life beyond death?" queried Zora, toying with this subject of mystery which interested her.

"However," ventured the professor, as if adding to what he had already said, "the idea has been suggested during my earthly life that the ectoplasmic

afterlife cannot exist independently until after a partial decay of the protoplasmic cells, so in view of the fact that my body suffered no decomposition whatever during its forty million years sojourn in space, my particular case does not prove the non-existence of an afterlife."

"What did it seem like to wake up and find yourself a machine man?"

"It was very strange," the professor replied. "When my senses returned, I thought that I was still lying in my death bed—that I really had not died at all but was returned from the region of dark shadow and oblivion into which I had relapsed. Imagine my consternation and dumbfounderment to find myself what I am now, a cubed body, four metal legs, six metal tentacles, and my brain incased in a conical superstructure. Most amazing was my ability to look in all directions at once with the row of eyes completely encircling the base of my metal head, an eye in the conical apex affording me even upward vision. My sudden gift of mental telepathy was also surprising."

"Someday, I, too, will be a machine man," said Zora.

"How many years?"

"Roughly, around ninety of Zor's revolutions about the sun. It all depends upon my mental development and physical condition. We are generally strict about that. It is not necessary for me to wait; it is merely preferable, for I find that life as an organic Zorome is pitifully small in comparison to my anticipated career as a machine man. I shall make the change when my lifetime as a flesh and blood entity commences to decline."

"It seems strange that you will be a machine man," spoke Professor Jameson, casting mental emphasis on the male appellation, "though I understand that the brain alone is sexless, depend-

ant on a body to furnish its idiosyncrasies."

ALTHOUGH the machine men of Zor are immortal to ordinary conditions, occasional accidents will befall a metal head from time to time, and a propagating source must be maintained to keep the species from becoming extinct.

"We lost many on the planet of the double sun," said the professor. "Including myself, there were five converts to the ranks of the machine men. Of the four tripeds, we lost one of them in a battle at the center of the hydro-sphere."

"Converts do not always prove so satisfactory as you and the tripeds, 21MM-392," mentioned Zora, a troubled frown mantling her face.

"You mean that they fall below the mental standard?"

"Not that so much. Their ambitions become colossal, and they do not follow the simple, philosophic ways which we Zoromes find are the best means of continuing a sustained, unfluctuating existence free from civilization's rises and falls, unlike life on your turbulent planet, earth, where somebody fought somebody else all the time for greed and petty honors. At this very moment we are in hostile relations with a world of metal converts, converts for whom we are now sorry."

"I had not heard of them before," said the professor. "Tell me about it."

"It all happened since 25X-987 started from Zor with his expedition, the expedition on which you returned, 21MM-392. For a long time before, we Zoromes had contemplated making machine men out of a race of intelligent creatures on the planet of a near by system several light years from our own planetary system. We selected certain mental types, and the operations were suc-

cessful. We gradually built their numbers into several thousands, giving them long life and prospective immortality they had never before known, and we taught them the conquest of space.

"But unscrupulous and ambitious types among these Mumes of Mumed tricked and cheated their way past the inspections given each one before admittance to the operation. Several substitutions of subjects were made, and a malign, self-centered opposition grew among the Mumes under clever propaganda instilled by ambitious malcontents of Mumed. The first break between Zor and Mumed arose when insistent demands came from the Mumes to create more machine men than we considered prudent and satisfactory.

"We at once discontinued our conversion of the Mumes, and this was the signal for another of their ambitious moves. They had acquired from us sufficient knowledge and art to make their own brain transpositions, and they immediately severed all relations with us, warning the Zoromes to stay away from Mumed.

WE did stay away, knowing full well that their isolation, and disregard on our part, would prove a most satisfactory end to our regretted experiment, but this isolation did not persist. Space ships, manned by machine men from Mumed and by living members of their species, came and raided Zor and the other planets of our system quite unexpectedly, pillaging for various scientific knowledge and apparatus their dreams of empire and dominance had demanded."

"Were they successful?" Professor Jameson inquired.

"By the surprise of their attack, yes," Zora explained. "But now Zor and its sister worlds are well protected. Expeditions were sent to Mumed to chas-

tise and warn them against any further degradations, but to the surprise of our expeditions it was found that Mumed had become a bristling fortress of defense, its atmosphere and surrounding space well protected by automatic rays and destructive forces of interplanetary warfare."

"They will eventually try and conquer Zor," said the professor. "It is plainly obvious. Something should be done to forestall them."

"That is well realized," Zora admitted. "At present, constant work is being done in the matter of espionage through our recent application of an invisibility treatment of our space ships. This advantage of invisibility is a new discovery contributed by one of our recently returned expeditions. When the Mumes become aware of what we are doing, they will probably counteract our success of invisibility in some way or other. Do not underestimate them. Besides being excessively ambitious, they are cunning and shrewd, especially those who have been made machine men."

"Why not disintegrate their world," Professor Jameson suggested, recollecting the world of the dying sun they had destroyed by progressive disintegration on their way back to Zor. "It is in another system, and it will solve the entire problem."

"That has been suggested before, 21MM392, but we are reluctant to do it. It would disrupt the entire system more or less, and this would prove fatal to a race of creatures on Ablen, a neighboring planet of Mumed. I refer to the Ablenox whom the Mumes have enslaved and have otherwise maltreated. If all else fails, and if the safety of Zor and its civilization is menaced, the Ablenox will have to take their chances against the disintegration of Mumed. A ship under Bext has just returned from Mumed, where several of their space

ship bases were wrecked and a grim warning left, that further acts of truculence against Zor would result in space-war."

"Who is Bext?"

"Bext is my lover," was Zora's startling announcement. "He has come back from Mumed with the distinction of having proved himself a leader among the Zoromes."

"Your lover!" Professor Jameson exclaimed; then momentarily he diverged from this phase of the conversation to put another question. "Do flesh and blood Zoromes risk themselves to such perils as Bext undertook?"

"Certainly they do," replied Zora, drawing herself up proudly, "though a crew of machine men always accompany them ready to protect their mortal bodies against harm."

"But even so, such a venture is dangerous," the professor observed, "for Bext and his fellows must breathe and be allowed the conveniences otherwise necessary to organic life."

"He came back unharmed to me," spoke Zora, "and he accomplished his mission thoroughly."

"Your lover," mused the professor. "It is strange. I knew long ago from discourse with 25X-987, 744U-21 and others of the machine men, that an organic race of Zoromes existed for the propagation of the species, but I was never aware that beyond a feeling of fidelity and comradeship a sentiment existed among you."

"Did you not tell me that love was a prime motive on your planet earth?" queried Zora a bit imperiously. "Do you think that we of Zor are so backward as not to be versed in the finer arts of sentiment? You seem surprised!"

"I AM surprised," the professor admitted, staring covertly at the snapping eyes of the princess, "though not

because I underestimated you, but rather the opposite."

"What do you mean?" queried Zora, a bit confused by the professor's non-committal allusions.

"I believed the Zoromes far too practical and mentally stabilized to pursue the veiled fantasy and deluding grandeur of love."

"Deluding?" challenged Zora indignantly. "What is there deluding about it?"

Professor Jameson regarded her a bit pathetically, then whimsically, before forming his reply.

"Stripped of its glamor, its falsities, its hypnotic fascination, love is the irresistible instinct to fulfill a biologic urge, the seeking by half a species for the other half, bringing about the subsequent mating and eventual propagation of the species, in this manner fulfilling nature's law," the professor explained. "Love rarely yields its fluorescent promises, for like the bright petals of a carnivorous flower it brings its victims to serve the wholesale ambitions of a far-seeing destiny."

"It is easy for a passionless mechanism like yourself to think that out so wisely and scientifically!" snapped Zora. "You were not always a machine! Were you ever in love, or did you always mother such staid, idiotic ideas of the tender passion?"

Professor Jameson felt amused at Zora's scathing sarcasm. His sense of humor represented a radical departure from his fellow machine men, a state of mind they rarely understood. Now, the final question of the princess stirred long dormant memories, taking him backward more than forty million years to the little village of Grenville. His attitude sobered. How well he recalled his one and only love affair, the inspired devotion of a young man for his promised one.

"Yes," he admitted. "I loved once and was loved."

"Tell me about it!" urged Zora with sympathetic interest, vaguely discerning a scarce mentioned secret veiled behind the professor's admission.

"There is little to tell," the machine man replied. "I was young, ambitious, happy, my mind full of the ideals and hopes of youth. It was in this frame of mind that I met Mara, the most gorgeous semblance of womanhood it was my fortune ever to lay eyes upon. Her loveliness, her gentle charm, her sweet fascination overwhelmed me and dizzied my senses, and I fell hopelessly in love with her. Very soon after we met, I told her of my love one night while we were together."

The unforgettable scene flashed into the professor's mind across the interminable abyss of time and was clearly shared in the mental perceptions of Zora. She visioned a small lake in the soft, ethereal light of a low hung moon. Down a shimmering path of moonlight reflected from the calm surface of the water, dripping oars shed jewels sparkling with silver, gently propelling a small boat through the still waters, the prow spreading undulating ripples to either side.

AS seen through the professor's eyes, the memory envisioned a white, wraithlike object sitting opposite him. The oars were lifted, allowing the boat to drift slowly on its momentum. The vision, unmoving came gradually nearer. The professor had evidently changed his position. The boat, unguided, drifted aimlessly, turning so that the moonlight shone full upon Mara's face.

Starry eyes reflected the wonder of the night, matching the glory of the far off stars so thinly spread throughout the ghostly diffusion of a moonlit sky. A tenderness and expectation was

apparent in the upturned face and parted lips. The face came closer, startling close, and dark lashes closed softly over the approaching eyes. Nearer the face loomed until it became blotted from the moonlight by a shadow, a shadow accompanied by encircling arms. As if a shade had been suddenly drawn, as if Zora had closed her eyes to something at which she was looking, the vision quickly disappeared.

"We became betrothed," the professor continued. "The wedding was set for a day in June."

The professor paused. Something in the old memories had returned to him, passing swiftly to be gone once more. Zora did not urge the machine man. Sensing imminent tragedy to be related, she waited, respectfully.

"Mara took sick, and like a fragile flower dimmed away slowly, and I, seeing her like this from day to day, could do nothing for her. Still young, a creature of celestial beauty, she passed away, and tears did nothing to bring her back. The bloom of life, mysterious life, had fled. In its place was an image of Mara, devoid of sentient entity. Her hands were hard and cold like marble. She was buried on what was to have been our wedding day."

Zora had caught her breath. Her heart was full of sorrow, a depth of sorrow the machine man, devoid of a living heart, could no longer feel.

"Her memory lived always with me after that," said Professor Jameson. "I never wanted anyone else. I have often wondered if she were not waiting for me on the other side, the afterlife we so recently discussed. My body was long ago destroyed, right after 8B-52 recalled my brain to activity. My brain still lives. If there is a soul, it must exist in the brain where the mysterious life force is contained and

sent ceaselessly through the spinal cord to all parts of the body. I have often wondered should my brain be destroyed would I find her waiting for me in a place where time does not exist."

"That happened forty million years ago, before the civilization of Zor had ever commenced, even before the seeds of life had ripened beneath our flaming sun," said Zora. "It is a tremendous length of time."

"The depressing influence of the dying earth, the thoughts of Mara and this afterlife I have mentioned, almost drove me to jump from a high cliff on earth headfirst, when I found that I was the last man on earth, a brain in a metal cast, that mankind had gone from the face of the earth ages past, but it was the kindly persuasion of 25X-987 and his forceful logic that swayed me in favor of a life of interplanetary exploration and adventure, else I would not be here with you today."

CHAPTER II

Sister Worlds for Zor

"HERE comes Bext!" exclaimed Zora.

A Zorome came walking out upon the great edifice, not a machine man but a male of the flesh and blood species. Unlike Zora, his body curves were less accentuated, while the fringe of membrane on his head was a deep red bordering on light purple. This was especially noticeable when sunlight struck it. As was customary with the male Zoromes, his walking appendage did not curve out from his body, and he possessed no eyelashes.

After a meeting with Bext and a short discussion with him concerning the trouble with Mumed, Professor Jameson left the two Zoromes and went in search of 744U-21. As he

disappeared around a broad column, his last sight of Bext and Zora revealed a confusing intertwining of tentacles.

Within the following days, Professor Jameson learned much of Zor and its sister planets, five in number, turning on their endless orbits around the flaming sun. The machine man visited all of them and came to know their individual histories and peculiarities. With the exception of the innermost planet, Poth, they all possessed rotations, each planet's year divided into days.

Poth was the only one not given over to habitation by either the organic Zoromes or their machine-men ancestors. It was true, however, that Poth contained valuable deposits which were mined under synthetic conditions, and the darkened half was partly built up and utilized for the refining of the deposits.

Next in order from the sun came Trach, so hot that only machine men were able to stay there. It was a huge manufacturing base. Beneath this swelter of blazing sun, organic Zoromes could not exist, and when they did visit Trach it was always on the night side, or in the dusk or dawn. The planet was waterless, an endless, barren desert of blowing sands, towering mountain peaks and cavernous canyons merging often into broad abysses which at an earlier date may have been filled with water. The atmosphere barely warranted the name. From afar in space, it represented a greenish ring surrounding the planet, possessing the ability to absorb and hold the heat of the flaming sun but incapable of sustaining any life on the planet. Machine men were indifferent to these conditions. As long as they were not subjected to excessive heat or intense cold, they cared little about the conditions surrounding them.

Third from the sun was Grutet, the smallest world of the system, not more than eight hundred miles in diameter, the professor estimated. When the Zoromes had conquered space navigation back in the dim, age-old past, they had found the world without an atmosphere. Later, as their scientific knowledge progressed, they supplied it with a manufactured atmosphere, fertilizing the planet's mantle and giving it plant life, that necessary balance to a respiratory atmosphere.

But the planet's gravity was so slight that the atmosphere gradually drifted away throughout the centuries, especially during the periodic passings of a particular comet. This comet which passed so close had been destroyed by the machine men, but even so the air of the tiny world still continued to drift away, and so the machine men had undertaken a colossal venture. They had enclosed the entire planet in a hermetically sealed, metal container. On examination, the professor had discovered this metal to be similar to chromium, rather an alloy which closely resembled chromium.

MASSIVE uprights, over two hundred feet in height, spaced far distant from one another, loomed and arched in all directions to support the endless roof. All kinds of climate including rainfall the machine men duplicated synthetically. The ceiling was painted luminous to render perpetual daylight, while in various sections of the tiny world were transparent facings to allow penetration of the sun's rays. It was a curious world where machine men of Zor and their flesh and blood counterparts resided together. Access was gained through gigantic air locks.

It was remarked to the professor that if Grutet should ever cease its rotation the chromium jacket would

crush inward upon the planet instantly. The mighty columns set so far apart were not primarily instrumental in supporting this massive shell. Centrifugal force and atmospheric pressure from within carried most of this latter responsibility, the columns performing a small part of it, largely maintaining a stabilizing effect of the great shell in relation to the planet it jacketed.

Fourth from the sun was the planet Zor itself, cradle of the life and civilization which had reached its Utopia, where an endless life as a machine man lay in prospect for each individual at the end of his organic span of years. Zor, the mother world, was the most magnificent of all. It was artistic and exacting to an extreme. If the tiny, chromium-plated Grutet was the most brilliant and dazzling object in this system, surely Zor was the most geometrically beautiful.

Viewed from afar it was just another glowing planet, but Professor Jameson recollects the wondrous surprise that had greeted his eyes when the returning space-ship had approached within distance where topographical features became detailed. Zor had appeared as a large sphere brilliantly decorated in strictly exact geometrical designs. Recourse to the telescopes had transformed huge oblongs into vast seas. Radiating lines became broad rivers whose courses had been guided by artificial channels. Tiny spots of delightfully varying colors were found to be important centers of life, while inset triangles proved on close examination to be vast plains of metal, the work of centuries.

Zor was second to the largest planet in size, its diameter a quarter again as great as that of the earth, its density about the same, the professor learned. The home world was given over entirely to habitation, culture and the finer things of life. When the machine

men on their expeditions spoke of Zor, they generally meant the collection of six planets, but when they spoke of home they meant the planet Zor itself. Here reigned the royal families of Zor from which new recruits were constantly added to the ranks of the machine men.

Dompt lay far outside the orbit of Zor and was the largest planet of the system. It boasted a pleasing climate, and the organic population of the system would doubtless have preferred this world were it not for the excessive gravity which first tired them out, then prostrated them with exhaustion, finally threatening their lives. Gravity nullifiers were necessary. All organic Zoromes who stayed there were compelled by necessity to carry them constantly. To the machine men, this excessive gravity meant only an added expenditure of the energy with which they could constantly recharge their metal bodies. Their parts wore out sooner, too, on Dompt, and it was necessary to replace them oftener.

DOMPT was used largely for laboratories and factories, also as a gigantic storehouse and museum for the many wonders both in stories and tangible curiosities brought back from the expeditions into the unending environs of the cosmic void, from myriad worlds afar. Museums, whose floors partly nullified Dompt's forceful gravity, held these curiosities and perpetual thought transmitters which told their long tales, then repeated them.

This planet possessed the only moon of the entire system, in fact it possessed two tiny moons so close together as to be influenced by each other's attraction, revolving around one another while holding a steady orbit about the planet Dompt. They were small and unimportant. Suggestions had been

made from time to time that they be disintegrated to facilitate interplanetary navigation, but a sentiment regarding the queer antics of the friendly little spheres acted as a brake against active execution of their destruction.

It was the organic Zoromes, inspired more or less by a sense of tradition and romance, who desired the maintenance of the twin moons, and this highly respected minority generally had their wishes in these matters. That, too, was tradition.

Ipmates was the outermost world, a world cold and chill, far removed from the crisp, stimulating climate of Dompt and still more distant from the summery warmth of Zor. Machine men alone lived on this bleak planet with its perpetual ice and snows, its barren, rocky vistas like the Siberian steppes, its subdued sunlight from a small orb in the sky, and its foul, unbreathable atmosphere.

To all this, the machine men were totally indifferent. They liked an occasional return to the other planets, but for one who could not feel the discomforts of such a world Ipmats was startlingly beautiful in a sad, terrifying sort of way, the professor's impressions told him. Ragged mountains punctuated the skies, rising in procession grim, jagged and unending. Between lay the valleys of snows and creeping glaciers. At night, the stars shone scintillating and cold, when roaring blizzards did not obscure them from sight of the machine men. The rare visits paid this forbidding boundary of the planetary system by organic Zoromes were performed in space suits, if they emerged at all from the roving space ships and transparent bubbles which brought them.

This outermost world was the base for interplanetary travel beyond the system of worlds. All expeditions were made ready and outfitted on Ipmats for

their ventures into the far flung boundaries of the star-studded universe. All modes of warfare, both offensive and defensive were collected here and subjected to constant experiment and change. The glowering, blustering fury of Ipmats had been well chosen to guide and foster the efforts of cosmic travel and made it a spot where the fates of worlds might rest, according to the keen, balanced judgment of the machine men of Zor. It had been this world, the professor learned, that had suffered the attack from the Mumes.

During the interval between his visits to the other five worlds of Zor's planetary system, the professor was much in the company of Zora and Bext. He accompanied the latter on several space cruises beyond the orbit of the sixth planet. The situation concerning Mumed was rather tense, and the Zoromes were constantly on the lookout for any belligerent tactics the Mumes might devise.

The professor found himself often in the company of Zora who exhibited a never ceasing wonder at the anecdotes the professor related concerning his life on earth and the colorful pages out of earth's history. Besides what history had accorded him in the matter of earthly knowledge, the professor also traced rather vaguely the history of mankind beyond the twentieth century from what he had learned during the experiment with the time bubble.

HE WAS telling Zora one day of mankind's exodus from the planet earth to a distant world of Sirius five million years after the twentieth century, when a machine man broke in upon them, evidently agitated by the state of his mind. It was 6W-438.

"The Mumes have attacked!"

"Where?" queried Zora and the professor simultaneously.

"The cruisers!" 6W-438 replied. "A large force of Mumes in their gravity ships captured Bext's craft!"

The color drained from Zora's face, her eyes widened, while her tentacles fluttered nervously. She said nothing, her mental processes temporarily stunned.

"Did they destroy the ship?" asked Professor Jameson.

"No," 6W-438 answered. "Bext's ship was quite a ways in the lead, and after getting it in their power of gravitational attraction they headed back in the direction of their own system. A wide ray of devastating energy was left behind them and radiated from all sides to protect them from immediate pursuit."

"Then the inmates of the captured ship are being taken prisoners," the professor suggested.

"Evidently. But Zor will not stand idly by and let them get away."

"Organized pursuit will be too late to head them off," said the professor. "I understand that their ships are as fast as those of Zor."

"Exactly."

"Bext!" cried Zora, riven with anxiety. "He must be brought back before it is too late!"

A great furore of excitement echoed from one end of the planetary system to the other over this impudent act on the part of the Mumes. To show their disdain of the Zoromes, they had purposely captured one of the cruisers, a ship designed to keep a watch for their intrusion. The affair had been carefully planned, and it boded ill of what was to follow. The Mumes, it was apparent, had been bent on capturing the leader who had come so mysteriously to their world and wreaked havoc with one of their principal centers as a retaliation for their raid on the outermost planet of Ipmats.

A rumble of space war rolled ominously from Poth to Ipmats, centering about the planet Zor, the home world. This last act was a defiant challenge of the Mumes. The machine men of Zor suggested the entire destruction of Mumes, yet secondary consideration always brought out the danger to the simple, thriving race of Ablenox, removed but two worlds distant from Mumes. It would mean their entire destruction before the planets of this system ever became rebalanced on new orbits.

Such a cataclysm would shake the entire orbital system and alter it profoundly.

IN VARIOUS quarters arose the demand for the rescue of Bext and his safe return. Zora was beside herself with fear and anxiety for her lover and threatened to seize a ship and start for Mumed herself. A council of war finally reached the decision that before any acts of haste be made, a detailed examination of Mumed be consummated. It was rumored that the Mumes had become proficient in the use of dangerous rays and other peculiar weapons with which the machine men of Zor were unfamiliar. The swift coup of victory in the event of space war, as popular opinion held forth, might not be so readily realized.

Professor Jameson heard with satisfaction the decision to send two space ships, invisibly clad even as the ship Bext had recently used in his concealed trip among the Mumes, to the planet Mumed. A double object supplied the motive. First of all, the two unseen ships must cruise about the enemy world and learn all that could be discovered concerning the planet's defenses, space ships and the nature of the protective rays which were reported to be used in encircling the sphere, rays which blasted

any object attempting to penetrate them. If Bext still lived, he was to be found and brought back to Zor.

744U-21 was chosen to head one of the ships. He came to the professor and informed him of his newly appointed capacity.

"I am taking my old crew, 21MM392. Which means that we who have survived the horrors met with on the planet of the double sun, who outwitted the menace of the hydrosphere's depth and conquered the dangers of the sunless world, are off on a new adventure, this time a trip of espionage, where we must restrain ourselves from aiding Bext until the last minute before we leave."

"If he still lives," conditioned the professor.

"I believe he does," 744U-21 affirmed. "The Mumes were too particular to take him alive. He was taken that way for a purpose, and it is logical to presume that the purpose is a protracted one."

"Information?"

"Possibly."

"Who mans this other ship?" the professor queried.

"24J-151, 55D-22, 893F-63 and others totalling fifteen in all."

"This invisibility," Professor Jameson asked. "How does it work?"

"It is a bath, a strange coating which completely covers the ship's entire hull, 21MM392. It is something like the ray you once told me that your own species used during your earthly life in acquiring translucent pictures of your organic bodies. This coating of ours is much more powerful and serviceable. Besides comprising a highly indestructible substance, it possesses the power of creating transparency from outside. Looking at the spot where our ship was descending, the Mumes would see nothing except the same starlit sky, or unobstructed daylight, whichever the case

might be. We in the space ship will notice no difference, for we shall be visible to each other as always, and everything beyond the ship will be visible to us. Like Zlestrim's time bubble, the transparency works but one way, only in this case the conditions are reversed."

Professor Jameson was no less anxious than the other machine men in getting under way for the planetary system of Mumed, a comparatively short trip across space. The ship of 744U-21 was to comprise sixteen machine men and four organic Zoromes, while the other ship under 24J-151 was to carry ten machine men and five of the organic species of Zor.

IN THE sheltered wall of a dark, looming pinnacle of massive rock, a mountain crag against the darkened sky, Professor Jameson saw two space ships slowly disappear before his eyes. They were on Ipmats. A far off sun reduced to the semblance of a small golden ball, still dazzling yet distantly removed, shed a subdued glow of sunset upon the towering crag which, etched in ice and snow, lowered menacingly over the squat buildings at its base.

Before these buildings were assembled the machine men, ready to set out upon their secret expedition to Mumed. Several of the organic Zoromes were present in space suits. Others remained in the two ships which were fast disappearing under the layer of gushing substances applied in red hot streams from long nozzles held by machine men, tubes leading off into the heart of the buildings.

A roaring of wind howled about the great eminence as fitful gusts of air, so poisonous to the respiratory organs of the flesh and blood Zoromes, raged and tore over the melancholy landscape,

carrying veiled screens of fine, crystallized powder dislodged from pockets in the rough surface and redistributed among the conical heads of the metal Zoromes. Again the tempest calmed, and clear vision reasserted itself through the intense cold, intense to the organic Zoromes, unnoticed and scarcely realized by their metal brethren.

The two space ships finally became lost to sight completely. Where two metal hulls had reared their dark, opaque shadows upon the snow-crusted mountain ledge, there now existed a clear view of the rugged escarpment dropping away to the depth of the valley, jutting black rocks forcing their irregular spires through the frozen expanse. Above the machine men, a doorway suddenly opened against the starlit sky, blotting out an oval background of glistening points, now supplanted with a solid layer of dull yellow light. Another doorway opened still further beyond the first, the only evidence that ships of space occupied positions upon the ledge. More preparations were applied to the invisible exteriors of the two ships.

"All ends must be caught up and tied," said 744U-21, figuratively speaking. "What they are now doing is to render this invisible coating contagious to any fine particles which may come in contact with it. Otherwise, particles of dust picked up in the atmosphere of Ipmats and Mumed, or even those accumulative, infinitesimal specks of space which escape our meteoric repellers, would eventually reveal us."

Effectually armed both offensively and defensively, the two invisible space ships left Ipmats for distant Mumed, nor did they first return to Zor. They left on a grim errand which was to mean much toward the near future, and there was no celebration, no heartening throngs to watch their ascent into space

on what portended to be a desperate venture. Behind them lay the dark, rugged fingers of rock upthrust from the widespread desolation of frozen, barren surface. Ipmats dwindled into a pale, thin crescent, then faded from sight.

Across space they leaped, across the dizzying depth of the cosmos, bridging the light years distance between the neighboring systems of Zor and Mumed. Of the eight planets in the latter system, only two were inhabited by intelligent life. Mumed lay third from the sun, while Ablen, peopled with a less advanced species than the Mumes, lay fifth in line, an intervening world, called Tanid, having its orbit between the two planets.

FROM afar, Professor Jameson and 744U-21 examined the sun they were gradually approaching. Already, it was the brightest object in the sky, and from a glittering point had become a barely distinguishable orb. 6W-438 came up behind them.

"Something has been found," he told 744U-21, "which warrants your attention."

6W-438's frame of mind suggested no alarm, yet he purposely concealed the motive of his interruption by a concentration of mental faculties. It was evident that he wished 744U-21 to make the discovery for himself. The professor and 744U-21 followed 6W-438 to the supply room of the organic Zoromes where boxes of foodstuffs and liquids were kept.

One of the organic Zoromes stood in the center of the supply room, but it was none of the four who had left with the expedition. The first hasty glance revealed that. Recognition smote the professor and 744U-21 simultaneously.

"Zora!"

"How did you get here?" demanded 744U-21, recovering from his brief shock and surprise.

"I hid myself among these," she replied imperiously and unabashed, waving a tentacle airily in the direction of several tall stacks of containers.

"But—why?"

Professor Jameson did not have to be told the answer to the question 744U-21 had so confusedly framed. He knew Zora well enough, and her reply came as he had expected it.

"I am going to help Bext. I love him."

"But you are seriously endangering your life—you—a member of the royal house."

"It matters little to me who I am—without Bext," was Zora's emotional answer. "I am going to him."

744U-21 recognized the impossibility of sane argument with Zora, while she was in this frame of mind. He turned to the practical aspect of matters.

"You stowed yourself away. What will they think back on Zor when you turn up missing?"

"They will know by now where I am," said Zora. "I left word."

"I have half a mind to turn back," 744U-21 suggested.

"No!" pleaded Zora. "Let me go, too! I can be a useful member of the crew when we reach Mumed! Besides, there is the other ship to think about! You cannot turn back now!"

744U-21 pondered the idea. He bewailed this impractical madness which afflicted organic Zoromes. Its termination, the eventual mating and subsequent propagation of Zoromes was a worthy and sensible goal, he well realized, but what foolish, senseless deviations from cold, logical reasoning this disease of the imagination placed upon its hopelessly implicated subjects.

THE professor, catching the exasperated thought impressions of 744U-21, smiled inwardly. 744U-21 had no sense of humor. Since his transformation from an ancient corpse, perfectly preserved in the cosmic vacuum, to a machine man, Professor Jameson had, strangely enough, discovered that sense of humor was an idiosyncrasy peculiar to people of the earth. He had run across few species in his cosmic travels, who were possessed of humorous qualities, and then such qualities generally ran to an ironic tendency.

The professor and 744U-21 realized mutually that Zora's agony of mind, her fretfulness at delay, and her own unbounded confidence in the belief that she could personally be of great service in freeing Bext had forced her to come. Both realized it, yet the professor was alone openly sympathetic. To 744U-21, it was an unforeseen circumstance of troublesome consequence. Yet he accepted her presence as inevitable, and so Zora became a part of the expedition.

Tiny, unblinking points of light became planets, the two ships of space, cloaked in their invisible mantels, entering the system of Mumed. Ablen was passed as a growing crescent and left behind and far to one side as a gibbous orb. Tanid, the planet between Ablen and Mumed, lay in opposition to its bordering worlds. Past the orbit of gigantic and uninhabited Tanid the two ships passed on their way in the direction of Mumed, which grew steadily larger, assuming the proportions of a gigantic ball, its topographical features limned clearly under a cloudless atmosphere.

"See those palpitating, flickering rays of light which sweep intermittently about the planet?" 744U-21 inquired. "We have to penetrate them safely in order to cruise about Mumed."

"They seem to expect us," was 6W-438's ominous observation.

"After what has happened, it is not strange of them to expect a retaliation," said 744U-21, "but they are not yet wise to our invisibility treatments of our space craft, and they will be looking for us, not using their proximity detectors as thoroughly as they should."

"How can we ever get through that destructive radiance?" the professor queried, lifting his gaze from the telescope levelled at the shimmering, spreading fields of light which blanketed Mumed with glowing transparency.

"They have safety lanes where their own ships may enter and leave, these safety lanes being opened and closed at will. We shall have to wait and follow a party of their ships inside."

"We cannot accompany but one of their ships," 6W-438 advised. "Their proximity detectors would spot us out instantly, even though they were unable to see us. What would be more startling than to feel a ship about you somewhere when there was no ship in sight. Our entrance will go unnoticed, however, along with two or more of their ships."

"It is not our entrance we are to fear," was 744U-21's grim suggestion. "It is our leavetaking which will prove the more dangerous, especially if the release of Bext is accomplished with any great difficulty."

CHAPTER III

War Clouds

AT a short distance, the two ships from Zor cruised about the planet they had come to investigate. Finally, three of the enemy ships were found far out in space. Keeping behind their course at a distance which would fail to register upon their detectors, the two invisible ships hung doggedly to the

flight of the three ships which were circumnavigating their own world. Those in command of the two unseen ships felt satisfaction as the three ships swung quite suddenly for a tiny, glowing spot on the planet's surface. Where the thickest radiations of light were clustered, there suddenly opened a break in the destructive wall.

Into this opening the space ships dropped. Out in space, the two prowlers from Zor sped close on the heels of their quarry. 744U-21 called for a maneuver which brought them midway between the first and second enemy ships. 24J-151, he well knew, would range his ship between the second and last in line.

Unaware of their unwelcome companions, and attaching no significance to the queer behavior of their detectors, the three ships of Mumed safely negotiated the passage through the rays and into the upper reaches of the atmosphere. They dropped ground-ward, while the two invisible ships from Zor hung far up in the air above the air-ships and fliers which coursed their routes nearer the surface. As 744U-21 had mentioned, a collision of the aircraft with one of their invisible ships might start an investigation.

"What about our thoughts?" queried Zora fearfully, shuddering slightly at the idea of revealing their presence.

"It will require an effort of concentration to reach the Mumes," said 6W-438. "Their mental perception was never as keen as ours. It is their detectors we have most to fear, and we expect to arouse no suspicion near the planet, because of so many other objects approximating our substance and bulk."

"It is a strong temptation to wreck that city below us," mused 41C-98. "What a just retribution for their attack on Ipmats."

"We would be in for it after that,"

the professor observed. "We are safe just so long as we merely investigate and do not show our hand."

"Where—where is Bext?" Zora asked anxiously.

"We must discover that at leisure," 744U-21 insisted. "His release is to be our final act before leaving Mumed. In the meantime there is much to be learned of this world. It has been long since a machine man of Zor stepped friendly foot on Mumed."

For days, the two space-ships lurked among the centers of life on the planet Mumed. Everywhere there existed a martial spirit, a grim preparedness. The Zoromes not only saw but listened as well. They became acquainted with the general plan of the Mumes. Roughly, it was to continue depredations among the planets of the Zoromes until the latter rose up in wrath and came to Mumed in a declaration of space war. The Mumes preferred fighting near their own base where the invading forces would be at a disadvantage and could be more easily annihilated. Zor, having shot its bolt, would then be open to conquest by the empire dreamers of Mumed.

Professor Jameson had his first view of the Mumes. The machine men he found as exact counterparts of himself, but, as 744U-21 had explained, their mental perceptions were below the average of the Zoromes. The organic Mumes were strange creatures. They appeared to the professor as large spiders with cranial superstructures. Their globular bodies, slightly flattened at top and bottom, were equipped with eight jointed appendages, while from the top center of their bodies projected a head, a smaller globe atop the larger one.

Professor Jameson also saw many of the enslaved Ablenox from the planet Alben. They were great, hulking

brutes of physical strength, yet they were no match for the machine men of Mumed. Their lesser intelligence was obvious. The Ablenox seemed peaceful and slow to anger, despite their physical possibilities. They walked upright on two lower limbs, their barrelled bodies possessed of four upper appendages heavily muscled and terminating in six digits arranged scoop fashion.

MUMED was ruled over by a machine man, a harsh dictator, 6D4. The Mumes had copied the numerical classification of their benefactors, and now their chosen enemies, the Zoromes, but less than three generations had been born since the first machine man of Mumed had been created, and the numeric distinctions ran low.

All was not found tranquil on Mumed in spite of the united cause. 6D4 was hastening the manufacture of machines and cutting short the organic lives of many Mumes in order to equip his machines with reasoning brains. Dissatisfaction reigned in many quarters regarding this, for several of the transpositions were unsuccessful, and as 744U-21 pointed out, more of them already changed to machine men would come to grief due to the indiscriminate mental inadaptability. This very reason had caused the severance of relations between Mume and Zorome.

But these dissatisfactions were trivial in comparison with the surging movement of war-designs, and the metal shod feet of 6D4 figuratively stamped out even the most timorous objection to his aims. 6D4 was a machine man, and unlike the esteemed regard the metal Zoromes bore for their organic brethren, on Mumed the flesh and blood Mumes counted for little other than possible material for the machines. The metal Mumes became important with self-

glorified distinction, and 6D4 had become drunk with the passion for conquest and power.

The secret investigation by the two invisible ships from Zor disclosed the fact that the Mumes depended little on space craft for their anticipated warfare with the Zoromes. It was true that many ships were being turned out by the Mumes, but their greatest weapons of war were located on the surface of their world. Huge rays were to stab accurately into space and annihilate the attacking ships of Zor at immense distances. A startling feature concerning the protective waves of destructive radiance sent shimmering about the planet from huge power plants was brought to the notice of the unseen visitors. The wall of palpitating light was impervious to the rays and other offensive measures of the Zoromes. The Mumes felt reasonably safe behind this transparent veil of death—death to the operators of any space craft attempting to penetrate it.

Another new weapon was also discovered among the machine men of Mume. As luck would have it, the Zoromes chanced upon a demonstration. It was a small gun for close fighting. That was what Professor Jameson termed it, a gun. To the Zoromes, it was an ejector of metallic destruction. Evidently the Mumes were anticipating tentacle to tentacle combats with the Zoromes. It was later learned that these weapons were to be used in the counter attack on Zor following the destruction of the Zoromes' space fleet.

These small side arms carried by the Mumes were metal-eaters, their action on a machine body the same as a moving stream of water on a bank of soft mud. Aimed at the metal head of a machine man for a few brief seconds, these pistols were truly terrible. Their action was soundless and invisible, no

light or other manifestation issuing from the blunt, concave end. The gun was aimed, a slight pressure applied, and the metal target commenced to disintegrate over a surface of several square inches.

THE two ships, lurking unseen about the various centers of activity on Mumed, gave access to much knowledge concerning the armament and plans of the Mumes. overshadowing completely all minority for peaceful intentions, rose a fever of activity, a conquest complex, overweighted ambition. Often, the invisible prowlers rose high in the upper atmospheric strata for a conference, where thought exchanges might be made freely from ship to ship without fear of detection from below.

As a race, the Mumes were below the mental standards of the Zoromes, but here and there existed an outstanding exception to the general rule, and these rare exceptions were guarded against. Free thought among the Zoromes was carefully restricted near the surface level, and a concentration of thought conversation from one ship to the other avoided. This, however, did not hamper the Zoromes from searching the minds of the Mumes, the latter possessing no knowledge of the mind-listening presence. To the professor, it seemed much like many people silently eavesdropping while they abstained from conversation to hide their own proximity.

Reference was made occasionally on various sections of Mume to the captive Zorome, and a burst of hope in the sentient, beating heart of Zora optimistically linked this appellation with her beloved Bext. 744U-21 was of the opinion that this celebrated captive might easily be the captured commander of the Zorome cruiser which had been

snatched away so ruthlessly by marauding Mumes. The work of investigation was done. They learned that the captive was on exhibition at Ndlet, an important base for the return of incoming space craft.

It took the two ships but a short time to locate Ndlet. Surrounded by a city, vast buildings, the principal manufacturing plants for space ships, loomed up from below to meet the invisible ships of the cosmic void.

"Bext—he must be there!" cried Zora.

She pointed far across the city to an open spot among the buildings where tiny shifting dots designated a crowd of Mumes. In her heart, she truly believed that Bext was where she pointed, and where her heart dictated she must go. There was no swerving of Zora's purpose. 744U-21 entertained the possibility of Bext being there, but he was not guided by the intuitive instincts which actuated Zora.

The ships sped low over the mingled crowd of both organic and metal Mumes, the latter predominating in numbers. The object of their attention was a single Zorome who looked down upon them from a raised platform of massive stone blocks. He stood there taciturn and unmoving, in the latter case because his tentacles were securely fettered with metal cables which led to inset staples deep in the stone platform. A metal girdle encircled his waist. Because his face was bruised and scarred, and because there were grooved, unfamiliar lines of suffering, Professor Jameson did not instantly recognize him. But not so with Zora.

"Bext!"

In her mental cry was crowded a world of anguish, pity and love. Instinctively, she pressed herself against the side of the ship nearest Bext, her eyes close to a transparent port. The

haggard face was seen to undergo a transformation, like the surface of a planet suddenly sun-kissed by the unexpected break in an ominous, black cloud. So it seemed to the machine men watching from above.

"Zora! It can't be! You're not here!" The tired face grew sombre once more, a wan smile flitting suggestively, derisively, across the worn features, as if sudden realization had dispersed a mirage. "The delirium! I am losing my grip!"

"I am really here, Bext! You are unable to see me!"

BOTH hope and bewilderment mingled in the expression on Bext's face. He became lost to the chaos of lesser thought impressions hurled at him by the spectators below. They were jibing him, this sentient symbol of what Zor and its retinue of worlds was soon to become. They told him that the beauty of Zor would be overrun with the Mumes. The Mumes would conquer, then extend their empire over neighboring systems adjacent to both Zor and Mumed. Zoromes would be helpless beneath the heel of 6D4 and his empire builders, even as Bext himself was, this upstart, who had come to Mumed and dared to retaliate for their raid on Ipmats and return to Zor to boast of his act.

Bext remained oblivious to all this, however, sweetly oblivious to the dull pain of his hard, unyielding fetters and the cruel, biting girdle over which his cramped body sagged. Once more his mind swam in symphonious harmony with the consciousness of Zora, that entrancing, nerve-dulling, mental phantasma which Professor Jameson had often felt guilty in disturbing or penetrating with his own matter of fact thoughts, whenever he had found himself in company with the two.

The mental communion of Zora and Bext had somehow provoked misinterpreted attention from several of the more mentally acute Mumes, for several of them were now centering their jibes on Bext's disordered state of mind, believing that he was weakening, that he was losing his mentality, foolishly talking to friends of his who were not there. As Bext had originally suspected on hearing Zora's exclamation, they believed that he had broken down completely, his brain suffering from mental delusions.

"Careful, princess!" 744U-21 remonstrated kindly. "Do not give up our secret, or else it may prove even more difficult than it now looks for the release of Bext. There are those down there among the Mumes who are nearly on an equal with us in reading thoughts. The concentration between you and Bext was unusually heavy."

"Oh, get him! Get him away from that place, and let us fly from here!"

Zora had been the most anxious of any to come, cloaking her terror beneath the clinging resolve to find Bext at any cost. Now, she was increasingly anxious to snatch Bext and be gone, terrified lest an ill-omened fate or circumstance might suddenly disrupt the plot to rescue him.

A slight acknowledgement of presence made them aware that the ship of 24J-151 was close behind, also watching the scene beneath them. It was up to 744U-21 and 24J-151 to take the initiative, and it was the former who made the suggestion.

STAND by, overhead, 24J-151, and we shall land just outside the crowd. Their attention is on Bext. I shall let my machine men out one by one, and they will mingle in the crowd. Only a few of us, including the organic Zoromes, will remain in the ship.

Twelve of the machine men from my ship will enter the crowd and edge close to the platform from different directions. At the command of 21MM392, who will be first to jump upon the platform and burn away Bext's cables with his heat ray, the others will cover his act and hold back the Mumes. When Bext is released, they will watch closely for the door of the ship to open, in order that they may know where the ship is and fight their way to it."

"And what shall I do?" asked 24J-151.

"Stand ready to lend whatever assistance you deem advisable in any way, especially in case of emergency. This is left to your judgment, for up above you will probably see the situation better. We must act quickly after 21MM392 gives the word. Because of the sudden surprise, our minority will possess the advantages. Should escape be delayed by reinforcements of the Mumes, it is up to those in the waiting space-ships to hold them off."

The ship of 24J-151 hung high over the assemblage of Mumes, while the other ship settled silently and cautiously near the fringe of the crowd. It was the plan of 744U-21 to keep his ship moving beyond the edge of the crowd, letting a machine man out at intervals, so that a sudden cluster of them would not attract undue attention. Also, if the ship remained too long in one spot, a hurrying Mume might discover its invisible compactness quite abruptly. Stealth and secrecy were of vital importance.

As the ship settled low, the oval door opened quickly and 47X-09 stepped out, pushing the door shut behind him, all in the space of a second. The act had passed unseen, and the machine man of Zor melted into the crowd surrounding the stone platform on which stood the fettered Bext. 47X-09 was accepted

by a disinterested populace as just another mechanical Mume. The ship passed on a short distance, rising quickly to be clear of a running group or organic Mumes scuttling towards the crowd on their jointed, spidery legs.

As the ship descended, the doorway magically reappeared, and another Zorome dropped close to the gathering whose attention was concentrated upon the spectacle of the wretched Bext. The doorway was near to the ground, and 20R-654 was careful to bring it close to the backs of organic Mumes, for wisely enough 744U-21 feared that one of the endless row of eyes, in the conical heads of metal, might sight the fleeting apparition of a space ship doorway, where there was no space ship visible.

6W-438 dropped out, melting into the packed assemblage, the door swinging noiselessly shut behind him. Then further on, it was the professor's turn. The furtive act was consummated successfully, and he pushed his way among the Mumes. There was only one in all that throng who saw the door of the invisible ship open from time to time, and he was the center of attraction, the captive Bext. A soft mental utterance from 744U-21 had given him to understand what was soon to happen.

Having encircled the crowd nearly twice, the ship rose slightly to be above the heads of those below, while twelve machine men slowly made their way to the front on all sides of the platform. From appearance, they were no different from the metal Mumes, and guardedly they controlled their mental radiations to conceal their identity, an act which the Mumes would have been unable to reverse.

PROFESSOR Jameson knew that a word from him would bring twelve machine men leaping upon the

platform beside Bext. He waited, unable to see across to the other side of the platform, waiting patiently until he believed that those, who had left the ship last of all, had gained convenient positions. With the exception of himself, none of the Zoromes who had emerged from the ship were armed in any way. The fore-tentacle of Professor Jameson's metal body possessed a devastating heat ray near its termination, and it was this heat ray the professor expected to employ in rapidly burning way the cables which held Bext to the stone platform.

Few of the Mumes were armed, however, and this minority carried the metal-eaters hooked conveniently at their sides. The machine men of Zor felt that had they entered the crowd with weapons too much attention would have been drawn to them. They would have been discovered almost immediately. Their defense lay in the two waiting ships which drifted above them.

The professor felt the fateful moment was at hand. A mental exclamation vibrated soundlessly from his brain, as a quick spring brought him hurtling upon the platform. He was at the side of Bext before the amazed Mumes could realize what had happened, and even then they thought it the act of a purposeful Mume bent on perpetrating some new indignity upon the helpless captive. But a bright glow from the tentacle of this machine man caused a wave of doubt, alarm and consternation to sweep through the crowd. The professor disregarded the excited interrogations which were flung at him, as the intense heat of his ray parted a metal cable.

Machine men leaped upon the platform beside him, but not to frustrate his act as many of the more sluggish thinking Mumes supposed. They formed a formidable metal wall about

the professor and the organic Zorome whose bonds were already half removed from him. Professor Jameson had no time to remove the metal girdle or the metal rings encircling Bext's tentacles. In fact, if the professor had possessed a plentiful supply of time he could not have removed them without seriously burning Bext. Ragged stumps of cables dangled from his six tentacles. The professor now devoted his attention to the thicker cables which held the self-locked girdle.

Unrest filtered through the crowd, and they surged for the platform, the metal men of Mume clambering up to investigate this sudden act which had occurred unheralded. Surprised, yet unsuspecting, they were caught up in metal tentacles and buried backward into the surging masses of machine men and organic Mumes. Metal feet from above pushed away clinging tentacles seeking leverage upon the lip of the platform.

A frantic cry from the mind of a more astute Mume instantly ended the disordered investigation of what was taking place on the platform and brought forth a deadly menace to the twelve machine men surrounding Bext.

"Zoromes!"

SEVERAL of the metal Mumes dragged at the feet of 34T-11, pulling him down into the throng. The corner of the platform on which 34T-11 had been standing lay unguarded and open to several machine men of Mumed, who were shoved up by their companions.

Frantically, the professor played his ray upon the last, thick cable holding the metal girdle of Bext, aware of the conflict that was descending like an avalanche upon his comrades of Zor. 6W-438, seizing the metal cable, snapped it short before the heat ray had eaten

more than half way through. 5ZQ35, once known as Jbf among the tripeds, felt a paralyzing sensation grip one of his metal limbs. He looked down just in time to see it dangle useless from his metal body, then fall away from him. Several corroding spots were growing larger on one side of his cubed body. He glanced out over the crowd and saw ejectors of the Mumes levelled at him and his companions.

A blinding flash blotted out this vision, originating apparently from nowhere. A wreckage of machine men and torn Mumes lay scattered beyond one end of the stone platform. A devastating blast had issued from the invisible ship of 24J-151.

Bext was now free and guarded by Professor Jameson and 6W-438. The professor glanced quickly around in search of the oval doorway which would reveal the presence of the invisible space ship. He could not find it. 6N-24 leaped headlong into the jumbled fray below them where 34T-11 was beset by several mechanical Mumes who had pulled him down and were attempting to pull off his all important, yet independently helpless, head. 176Z-56 joined him. More Mumes were mounting the platform. A tentacle encircled 6W-438 and pulled him backward.

"21MM392!"

The cry rang frantic above the chaos of thoughts and mental ejaculations of strife, burning into the professor's consciousness. He turned to find a mechanical Mume squeezing the life from the gasping Bext. It was Zora from the invisible space ship who had quick-wittedly brought his attention to the peril besetting Bext.

Professor Jameson raised his heat ray full upon the pointed head of the Mume and saw him release Bext and go plunging madly into the maelstrom of fighting forces below, his tentacles

flailing frantically at both friends and foes in his indiscriminating haste to escape the blazing horror released so suddenly into his metal optics. 6W-438 battled desperately with two of the Mumes. The professor applied the heat ray to his two assailants and they quickly dispersed, one of them too late, falling inanimate, a hole burnt clear through his metal head. The professor seized Bext and swung him around out of reach of the climbing hordes of Mumes.

"21MM392—this way! Come!"

Again it was Zora's electrifying directions which bit into the professor's mind. He looked about him bewildered, searching for the oval door of the ship. All he could see on every side were hurrying, rushing throngs of Mumes, both mechanical and organic specimens. Three brilliant flashes in as many different spots blinded his vision momentarily. Again one of the unseen ships had struck, leaving three gaping spots of wreckage and dead bodies in its wake.

A RAGGED cavity upon the professor's body told him that he was the target for a Mume marksman, and now for the first time he saw several ragged pits on his metal legs and tentacles. The jostling mob was responsible for these unfinished cavities; otherwise, he might now be helpless.

Another series of crackling, hissing bursts of white-hot incandescence, splashed their wake of death into the excited hordes of Mume reinforcements, but near the platform the ships dared not loose their weapons, for machine men of both worlds grappled madly, tentacle to tentacle. Meanwhile, the invisible space-craft kept up their havoc, causing the rushing throngs of Mumes to turn back. By the platform, the Zoromes were still outnumbered twenty

to one, their only advantage lying in the fact that restriction of space failed to allow more than a fraction of the Mumes at them.

Professor Jameson suddenly discerned the doorway of the space ship. He pointed to it excitedly, calling the attention of both Bext and 6W-438. Even as they looked, a half score or more of machine men poured out from it, each armed with a ray gun similar to the built-in affair in the professor's tentacle. They were from the ship of 24J-151. Immediately after the last Zorome had hurried forth, the doorway disappeared. The ship had moved to avoid any possible destruction, its doorway once more closed. A gathering of Mumes were forced flat as the invisible ship leaped forward. Soon, the bombardment from above was once more unloosed upon the Mumes.

Space craft and airships of the Mumes were appearing on the scene. Those which came close were blasted out of the sky. An airship broke to pieces strangely, leaped sideways and fell to the ground amid a scattering of Mumes some of whom failed to escape it. There had been a collision with one of the space ships of Zor.

The odds were becoming so overwhelming on the platform where Bext had been recently fettered that the machine men and organic Zoromes were literally forced off into the assemblage below, a fighting, rioting battle of machine men.

"We shall land just beyond where the crowd is thinnest!" the professor heard 744U-21 direct him. "Get to the ship as quickly as you can!"

WITH Bext, the professor and 6W-438 fought their way in the direction 744U-21 had designated. Exhausted as he was, Bext flailed savagely with the burnt cable ends as the heat

ray of Professor Jameson cleared the way. More than once, the professor and 6W-438 felt the insidious, metal-eating pistols directed their way. Bext gave a warning cry as he saw tiny streams of granular metal drip from the professor's head. A nearby sniper had his gun snatched from him by 6W-438, who thereupon wielded it himself.

Explosions still cracked and hissed all over the public square of the Mumes, as the invisible space ships maintained a protecting barrage. Inert machine men lay quiet victims of either the heat rays or the metal-eaters. Organic Mumes lay dead, broken and crushed. Bits of metal were scattered in all directions, significant results of the explosions. Equally significant were dark, wet splashes of color.

CHAPTER IV

"He Died Fighting"

FULLY a dozen mechanical Mumes surged in upon the professor, Bext and 6W-438, seizing them in their tentacles. The two machine men fought savagely. Bext resisted demographically yet futilely. The professor's tentacle possessing the heat ray became cramped between himself and one of the Mumes who had seized him. The weapon of 6W-438 was wrested from him even as he himself had obtained it.

An agonized cry issued from Bext, an audible articulation Professor Jameson rarely heard the organic Zoromes ever utter. A flutter of mental terror and maddening anxiety sprang from an outward source into the professor's mind. From whom, he well knew, Bext was being viciously torn to pieces before his very eyes, the victim of the avenging Mumes. Madly he tried to fight his way to the side of Bext, but besides the dragging resistance of two metal Mumes, more of the enemy

blocked off his passage, separating him from Bext. Before anything could be done, Bext was dead. The professor saw him go down, trampled and inanimate in his own life blood.

Zoromes, with their rays of death, crowded into the fighting group. All was confusion. The professor felt a dull pain, and he went down to the ground, wondering as he crawled among the threshing feet if a metal-eater had found his metal encased brain. Searchingly, his tentacles roved over his comical head. It was deeply pitted in several spots, dangerously close to the vulnerable brain, yet he was conscious and no mortal damage had been done.

Vengefully, he tore loose with the heat ray, taking his stand with 6W-438 and several Zoromes from 24J-151's space ship.

"Quick—to the ship—there!"

6W-438 pointed to an oval doorway a short distance away. But one Mume blocked their passage. The professor's heat ray bore down upon him in unison with several others, and eight Zoromes rushed through the oval doorway and into the space ship of 744U-21. A few stragglers followed.

"Hurry!" cried 744U-21. "Rise, 20R-654! We must maintain a constant fire, while the ship of 24J-151 descends to pick up the remaining survivors!"

"Bext is gone!" 6W-438 exclaimed. "He died fighting!"

"I know," was 744U-21's sad rejoinder. "We saw it from the ship but could do nothing."

PROFESSOR Jameson sought out Zora, to console her as best he could, yet on seeing her he hesitated in his approach. Her mind, immersed in a manifold sorrow, shut out all communication. She stood alone, not far from where 41C-98 in his little artillery room kept up an almost constant fire of de-

struction in a wide circle about the center of strife below them, while 24J-151 picked up the remaining Zoromes. Looking about him, the professor saw that many of the Zoromes who had recently manned 24J-151's ship were present.

"Look!" one of the machine men directed. "Off upon the horizon!"

A series of black dots grew steadily larger in the sky, sweeping directly for the center of the recent combat.

"An armada of space ships!" announced 29G-75 beside a telescope.

744U-21 bent a hasty glance below where a few lingering Zoromes beat a hasty retreat to an oval opening into which they disappeared from sight.

"We must get away from here fast! Have 41C-98 cease firing! It is necessary to conceal our position! Now, if ever, our mantle of invisibility will prove its worth!"

On the square below, the oval door snapped shut behind the last Zorome, whose heat ray had splayed a devastating fire of destruction upon a Mume whose wavering metal-eater had pock-marked the Zorome's metal body. There came a rush of dust behind the spot where the door had been, and those watching from the ship above realized that 24J-151 had also seen the approaching armada.

"Away from here—fast!" urged 744U-21.

20R-654 shot the ship upward and sped at right angles to the approach of the numerous ships which dotted the sky. They were space ships of the Mumes sent hurriedly from a nearby location to the scene where the invading Zoromes had magically appeared from their invisible space-ships.

How many of the enemy ships had penetrated the veil of defensive rays, the Mumes did not know, but they were certain, however, that none would es-

cape. Several of the vanguard swept low about the spot of recent combat, flashing their rays horizontally, feelingly, hoping to strike an invisible enemy. Their rays also flared upward into the empty spaces, while aircraft quickly sought refuge to assist in the search for the Zoromes.

A blast leaped out of nowhere to crumple and explode one of the space ships of the Mumes hanging low over the city.

"24J-151 is mad to commit such an act!" 744U-21 exclaimed. "They will trace his ship and destroy it!"

"That ray was shot from our ship!" cried 20R-654 from the controls.

"The Mumes are commencing to close up this way!"

"41C-98—cease firing!" 744U-21 ordered. "They will find us!"

"I did not fire!" replied 41C-98.

744U-21 turned in surprise to find 41C-98 standing only a short distance from him. All attention became riveted in the direction of the artillery room. Inside stood Zora, grim, tense and resolute, her tentacles upon the dials and levers controlling and directing the destructive forces the ship of Zor was capable of unloosing upon its enemies. A movement of her tentacles and another of the approaching ships was torn half away, this time in off-center shot, the remaining wreckage plunging to the ground a shattered mass.

"Zora—stop—it means suicide!"

But Zora did not hear, or if she did she disregarded the command. Vengeance lurked in her every act, dominating all sense of reasoning, enveloping her in its spiteful cloak, lending her the fury of reckless abandon, a blinded indifference to the future. The present was all powerful. They had killed her beloved Bext, torn him viciously limb from limb. Her brain was afame with the tortures of the flesh and the indig-

nities of captivity they had perpetrated upon him; bound and defenseless as he was. They were to bear the brunt of her unleashed wrath.

"Zora—stop!"

THE only reply was the complete demolition of a large factory over which they sped low in order to wheel from the spot where flitting, flickering gleams of destruction marked their last position. Machine men hurried rapidly in the direction of the artillery room to prevent Zora's madness from further imperilling them, 41C-98 in the lead.

Blazing eyes turned to greet them, and a heavy metal door crashed downward, severing the fore tentacle of 41C-98 who had reached the threshold. Like angry wasps, the space ships of the Mumes sped in the wake of the demolished building, their rays playing and crackling through the atmosphere, both outward and upward, waving desperately to locate the invisible menace.

Only the keen maneuvering of 20R-654 saved them. Quickly he swerved about into the very midst of their ranks, narrowly missing collisions with several of the enemy ships. A raking devastation unloosed itself on both sides of the invisible ship and fully six of the Mume space craft were blown to bits. The reckless speed of 20R-654 made accurate counting impossible so quickly did they leave the spot where ruins fell from the sky. 744U-21 waved his tentacles wildly as Zora unloosed several more shots, ineffective this time, yet plainly marking the course of their retreat.

Machine men pounded and hammered at the thick metal door which only opened from the inside and which resisted their efforts.

"Upward!" directed 744U-21 anxiously. "Go high where there will be no such tempting targets for Zora's aim!"

The invisible space ship of Zor-

caredened to a vertical ascent which made the Zoromes lean crazily planetward, held only by the artificial gravity of the ship's flooring, which a nimble tentacle of 20R-654 had intensified at this vertical maneuver. Zora's rage, uncontrolled, now vented its fury with the long range equipment aimed at the buildings of Ndlet far below. One after another they burst apart, hurling débris and occupants skyward. Missed shots left great cavities and fissures in the avenues.

Blazing destruction swept dangerously close from below. Their existence hung slenderly on the skilled manipulation of 20R-654 at the controls as the ship lurched, turned and swung erratically from one side to the other to escape the numerous fingers of death, which crept and wavered all over the sky in search of them. And still Zora, unmindful of the frantic entreaties to desist, spread her path of revenge, oblivious to danger, secure from interruption behind the locked door of the artillery room. Meanwhile, the invisible space-ship sped mockingly in and out of death's snapping jaws.

At the order of 744U-21, they sped above the atmosphere, low beneath the unbroken ceiling of quivering radiance which hemmed them in, prisoners of the planet Murued. 20R-654 was enabled to put on tremendous speed once they were above the atmosphere, and the topography beneath them changed rapidly as they passed into the opposite hemisphere. This frustrated further efforts of Zora to vent her retaliation on the Mumes for the loss of her lover.

THE machine men felt easier. Safety, however, was only temporarily assured. The Mumes would come searching for them in a more determined manner, and no place would be safe for them. The Zoromes did not underestimate the cupidity of the Mumes. The

professor, in his previous conversations with the Zoromes, had likened these enemies to veritable Frankenstein creations that had turned upon their makers. Zor had become threatened by the bitter fruits of a kindly intentioned mistake.

The armament of the ship was stilled, yet Zora would not hold conversation with them. She remained strangely silent and unmanifesting, like the dangerous weapons over which she presided. Vaguely, the Zoromes sensed a change in her attitude which had yielded from blind wrath to heavy sorrow, draped veils of melancholy gloom, utter dejection, enveloping her. Shades of loneliness dulled her mind, and her next acts, impetuous impulses or studied deliberations, remained unconjectured aboard the ship by both machine men and organic Zoromes. Only by cutting through the metal door might they gain access to the artillery room, and 744U-21 refrained from this, feeling somehow that it would not be necessary. A close approach to the surface over a sleeping city in the darkened half of Mumed testified to the complete passing of Zora's wrath. As she apparently desired, she was left alone with her sorrow.

After what seemed a long time to the organic Zoromes, Zora lifted the door of the artillery room and emerged forth, wan, heart broken and badly in need of nourishment. Meanwhile, the space ship cruised stealthily below the mantle of pale, shimmering effulgence, seeking an escape, but the hollow sphere of radiant menace was found impenetrable. Several times they narrowly missed destruction by ships of the Mumes who located them with proximity detectors, and, seeing no visible ships, fired in all directions. The clinging persistence of the craft, whose commander was recklessly desirous of becoming

famed for the destruction of the invisible ship from Zor, necessitated its being shot to pieces.

It seemed, especially to the organic Zoromes, that this endless chase would never cease. Detector alarms were being placed everywhere, and when they found themselves in what they believed to be an isolated spot, free from pursuit, several black dots would drop from space into the atmosphere and search for them with their deadly rays. Escape was frequently preceded by a battle. The situation rapidly grew worse as the Mumes became more accustomed to their invisible maneuvers through the aid of the proximity detectors, and the search for the invisible ships grew more grim and systematized.

NOTHING was discovered concerning the space-ship of 24J-151, whether it was cruising beneath the protective covering of rays enshrouding Mumed, or whether it had made its escape. One thing was certain: it had not been brought down by the Mumes. The Zoromes would soon have learned of it in their elusive travelling about the planet.

Eventually, the food supply for the organic Zoromes became exhausted. A raid on a storehouse in an isolated city of Mumed was made. The provender of the Mumes sustained the Zoromes, though it proved flat and distasteful to their own peculiar appetites.

It was Professor Jameson who suggested a means of escape. This came about shortly after an unsuccessful attempt had been made to run a safety lane into space with several ships of the Mumes. The watchful enemy had detected the invisible ship, and almost instantly the ships of Mumed had dropped planetward while the pulsating rays of death rapidly closed once again, nearly catching the invisible ship from Zor.

The inevitable chase had followed before the Zoromes could confuse and elude their followers.

"We must capture a ship of the Mumes, abandon our own, and in this way escape to free space," said the professor.

"It is a desperate chance—giving up our one protection, invisibility," 744U-21 considered.

"But our only chance," the professor countered. "Sooner or later, a wild random shot of theirs will strike true, and then it will be all over for us."

The idea was agreed upon. They flew as near to a space ship terminal as they dared, but here again a proximity detector once more revealed them and they were forced to flee. The professor had based his chances on their escape under the fundamental theory that the most obvious features are those which are overlooked, yet it appeared that it would indeed be difficult to put this theory into practice. Several more days the invisible ship of Zor circled the globe beneath the blanket of unpassable rays. Zoromes remained constantly at the short range telescopes, and finally that, for which they searched, was found.

A space-ship, unintended and apparently unused for some time, was found near the outskirts of a city where the machine men were sure there were no detectors, for they lingered in the vicinity to make sure of no subsequent attack which always followed their discovery by a detector. Evidently the Mumes had not adequately covered every section of the globe, as 744U-21 had suspected might be the case.

The craft from Zor descended close to the solitary ship, hovering just above the ground while 6N-24 was let out to investigate the interior. He reported the ship space-worthy, and two more of the machine men were sent to take control of it. Close beside the invisible

ship, it rose high above the atmosphere of Mumed where both machine men and organic Zoromes transferred themselves, the latter space-suited. The invisible ship was stripped of all essentials and towed behind the stolen craft. According to further details in the professor's plans, they headed for one of the principal safety lanes which were so well guarded.

From a distance, they waited until a concourse of space-ships were about to leave Mumed. The invisible space-ship was sent drifting by a well directed push of the stolen craft directly for the opening of the safety lane into which the ships of the Mumes were heading. As the Zoromes expected, its invisible presence was immediately picked up by the Mumes. Several waving rays darted here and there nervously.

AN exploding mass of metal materialized suddenly out of the air, and the watching Zoromes saw the space ship which had so long protected them and befooled the Mumes blown to bits. The triumphant Mumes had apparently culminated their long search, and no longer would a tight watch be kept on the safety lanes to prevent the escape of this marauding ship from Zor, which had cost Mumed heavily in ships, property and lives.

The safety lane opened wide to allow the passage of the ships. In one of them, the Zoromes passed safely from the danger ridden vicinity of Mumed and into the depths of the cosmic void. Once free of the deadly covering of rays, they lagged behind the others in their stolen ship. Then at a safe distance, they spurted suddenly out of the planetary system and into the seas of space, bound for Zor.

On the trip back to Zor, the sorrow of Zora became less acute, though she felt that life held little for her now that

she had lost her beloved Bext. Professor Jameson with his irrefutable logic consoled her as best as he could, painting an inspiring future for her and pointing out that it was her duty to Zor to carry-on in the face of her heart-crushing loss, especially during this crisis brought about by the Mumes.

As is ever the way with universal law, which knows but a small percentage of exceptions, Zora's wrecked dreams became remodelled to fit the circumstances and environment arisen through the death of Bext. The destruction, she had caused upon Mumed, gave her an idea. She resolved to carry on in the capacity Bext had known. No longer would she stay upon Zor in comfort, idleness and luxury. She was to take an active part in the coming campaign against the Mumes.

On approaching Ipmats, 744U-21 was careful to avoid any cruisers of Zor, for the sight of an enemy ship would cause it to become a ready target for Zorome marksmanship. Close to the frigid, storm-tossed surface of Ipmats, radiations sent out by the thought amplifiers brought a protecting escort of ships to meet the returned travelers. On the surface of Ipmats, lit with a feeble sunlight, they learned that 24J-151 had returned long before and had stopped only a short time upon Ipmats before continuing to Zor. 24J-151 had seemed anxious to reach the laboratories of Zor for some urgent reason or other.

It was a pock-marked crew of machine men, several lacking a metal leg or tentacle, their bodies horribly pocked and scarred where the destructive weapons of the Mumes had found their mark, that saw the geometrical surface of Zor loom large. They came surrounded by the escort from Ipmats. At first, the terrestrial Zoromes believed that their forces had returned with a captive ship, but report travelled before

the actual landing of the ships, and it was learned that the crew of 744U-21 had returned and that Princess Zora was safe.

24J-151 was first among those to greet 744U-21 and the returned Zoromes, whom he feared had been lost. Following the tentacle to tentacle combat on Mumed, he had lost track of 744U-21's ship, when 20R-654 had found it necessary to put on tremendous speed in escaping the wrath of the Mumes at Zora's vengeful sniping. 24J-141 had escaped past several incoming space-ships through a safety lane while confusion reigned among the Mumes following the discovery that an invisible ship of Zor spread death and destruction in their midst. A rapid check-up between the two commanders found that seven machine men had been lost out of the two crews, four of them from the expedition of 744U-21. Those of the professor's comrades, who had accompanied him on many an adventure and who had gone to meet death, were 38R-497, 176Z-56, 34T-11 and 32B-64. None of the organic Zoromes had been among the casualties, however, due to the fact that they had been confined to the space ships during the attempt to rescue Bext.

"Bext died like a hero," was the professor's epitaph. "He fought to the last."

"Bext is not dead," was 24J-151's quiet, yet startling, announcement.

EVERY machine man gave a start of mental alarm, so completely surprised were they by 24J-151's contradictory assertion. Zora stood as if turned to stone, her eyes staring wide, her heart beats temporarily arrested.

"Not dead!"

"We saw him die—literally slashed to pieces by the infuriated Mumes!" exclaimed 744U-21.

"You are right about that," said 24J-151. "Bext did die, but so did 21M-M392 once; so I am told. There is Bext."

24J-151 pointed to a machine man of glistening metal parts new from the factories who now approached the group. How strangely he contrasted with the corroded, chemical eaten bodies of the Zoromes returned from Mumed who were so badly in need of repair and replacement. While the machine men and organic Zoromes stared in surprise and fascination at the new entrant to the metal ranks, 24J-151 rendered a brief explanation.

"When my ship descended to pick up the remaining Zoromes, 76H-385, one of those who came with 744U-21, noticed the dead body of Bext. It was torn and crushed, yet the head, half severed from the neck, was intact. It is to 76H-385 that Bext owes his present existence. He brought the head to the space-ship and, profiting from the experience of 21M-M392, we kept it in a stellar vacuum compartment until we reached the laboratories here on Zor. Bext's brain was removed from his organic head and stimulated to life once more. He is now known among the machine men as 12W-62."

"Bext!" cried Zora, at last collecting some order out of her chaotic thoughts at this amazing turn of unexpected events. "Is it really you?"

"Yes, Zora!"

In that answering affirmation, Professor Jameson detected the great change in Bext's attitude for Zora. Sympathy, comradeship and interest were manifest, yet that electrifying, nerve-startling passion was strangely absent. There was no quivering eagerness for the ecstatic communion of minds which Bext had once sought in the presence of Zora. The change in Bext was sharply contrasted by her own attitude which went

out to Bext searchingly in the same old way, yet, on finding no hold, wavered uncertainly.

"Zora, it is good to see you back," was Bext's friendly greeting. "We feared for your safety and 'all those aboard the ship of 744U-21 when you did not return."

"That we did not return soon is my fault, largely," was Zora's dispirited reply as she stared bewilderingly at the metal form of Bext, realizing with a choking sensation that with the death of Bext had died the tender passion he had borne for her.

Recalled to life, Bext had lost the natural impulses and instincts an organic body had given him. He was beyond the laws of scheming, plotting nature, and now he was under the synthetic conditions of a machine man. Somehow, Zora came to realize through the wise counsel dropped her by the professor that she could never love 12W-62. He was not Bext as she had known Bext.

The machine man, his mental attitude reborn in the laboratories of Zor, looked back upon his passionate regard for Zora much as do older folks look back upon memories of their childhood, which they are unable to recapture tangibly or cause to live once more because of their physical and mental change through the passing of years. Bext accepted the change with an indifferent fatalism. Had he anticipated it before his death, he would have wildly deplored such a seemingly impossible situation of losing his love for Zora, but that would have been like Bext, not like 12W-62.

In a bewildered state of mind, Zora retired to her palace, and was not seen very often after that single meeting with Bext. She was tortured mentally by the loss of her love, memory of which recurred constantly now that Bext was a machine man. Sometimes she selfishly

wished that he had remained dead, loving her as he had done to the last of his breath, yet calm consideration brought to her attention that this was a jealous wish. And thus she remained in torment, chained to a passion she could not forget.

Meanwhile, Professor Jameson and the machine men who had taken the dangerous journey to Mumed had their battle-scarred bodies repaired. Where tentacles were entirely gone or irreparable, new ones were installed. It was the same case with the metal legs. Ragged cavities in the metal of their bodies were filled and their whole mechanism given a new finish. Once more they found themselves entire.

The trip across space to the system of Mumed had not been in vain. Much had been learned. Already, it was reported that the Zoromes in the laboratories had manufactured a substance which applied to the space ships caused them to convert the destructive rays of the Mumes into force rays which hurled the ships of Zor to one side but did not damage them.

"How will this give us a passage through their protective covering about Mumed?" 6W-438 argued. "There is much yet to be done before we accept their open invitation to carry the fight to our system."

"It will be a battle of wits," said the professor.

The metal-eaters of the Mumes remained only a brief triumph of inventive skill on their part. Careful analysis by the Zoromes of several cavities made by the pistols on their metal bodies showed that the menace could be easily counteracted and made harmless by installation of a neutralizer in the metal bodies of the Zoromes.

One day, while Professor Jameson sat in conference with 744U-21, 6W-438 24J-151 and others, a machine man en-

tered upon their presence. Something about the machine man's new glistening body and mental stance instantly put the professor in mind of Bext. Yet it was not Bext.

"Zora! You!"

"1198-5," the machine man corrected. "Will you not offer me congratulations?"

"But, Zora, you were still young, and a long life, of a character we machine men do not know, lay before you!"

"I know it, now," was the quiet reply, "yet I never would have come to realize it. I was too deep in the grips of that passion called love, 21MM392, that irresistible impulse of nature's fashioning of which you spoke so calmly. Recalling my agony of mind and desolate feelings, I am not sorry that I sought this means of escape. Now, looking back, it all seems utterly foolish, even as it must have seemed to Bext after his brain transposition, but it all depends upon what attitude you take."

"Have you seen Bext yet since your change to a machine man?" the professor inquired curiously.

"Yes. He will be sorry that I had willfully given up my organic life to become a metal Zorome. He thought it deplorable, in his practical manner, and I agreed with him, yet I am not too far removed from my organic existence to lose track of my former attitude entirely, and I know that life would have held little for me as Princess Zora. Love is bitterly cruel even as it is inspiring." and beautiful."

"And now what are you intending to do?" queried 744U-21. "Now that you are one of us?"

Zora's ready reply provoked fresh memories in the minds of the machine men present.

"I am an artilleryman on a ship under the command of 12W-62 in the coming space war."

The Body Pirate

By ED. EARL REPP

We are very glad to present a story by Ed. Earl Repp to our readers, one who has long been a favorite with our clientèle. You will find in this story his old touch and distinctive treatment with which he has pleased so many readers. It is a story in which a wonderful surgeon treating a human being, in a sense as a guinea-pig, operates on the brain trying to get "Mens sana in corpore sano."

GHOSTLY and weird was the room in which Dr. Lape sat, staring fixedly into the dead, soot-blackened fireplace.

Though the world outside was bright and cheery under the warm spell of a New England spring day, the room, comprising both laboratory and study for the scientist, was a place of spectral shadows cast upon the colorless gray walls by subdued lamps placed carefully in the corners so as not to shed too much light upon his great test tubes, several of which were much taller than the man himself.

At a glance over the place, one would have suspected that Dr. Lape either did not care particularly for sunlight, or that too much natural illumination had undesired effect upon his various experimental subjects confined in the huge tubes. In either event, the lighting in the room was hideous, giving it the uninviting aspect of a sorcerer's den.

Dr. Lape himself was scarcely less repulsive to look at than the distorted shadows upon his laboratory walls. He seemed to fit in with them perfectly. He was a man of indeterminate age. As often with natural-born hunch-backs, it would have been difficult to guess just how old he actually was. He might have

been forty or even fifty. Certainly he looked no older now than the day Dot Faversham, graduate nurse, went to work for him. And she had been his only assistant for nearly six years now.

As is frequently the case with nature's human freaks, what Dr. Lape lacked in the way of physical charm was more than made up by his super-mentality for things scientific. And until recently he had devoted that super-mentality to the correction, at birth, of such physical mishaps as himself. Just how far he had progressed in that direction could have been readily observed in the cold facts contained in his many volumes of books on the subject.

Mentally, Dr. Merton Lape was a genius. Physically, well Dot Faversham had learned to overlook his twisted spine, shallow, colorless face and duck-like waddle in favor of his genius and his philanthropic endeavors. At first she had been in a state of constant horror in his presence. This she had overcome when she realized that in the final analysis he was a great man, who was contributing invaluable facts to mankind. She had even, as time passed, become indifferent to the piercing qualities of his sunken, wide-set eyes that glittered in their sockets like chips of blue-glacial ice. His great head and its sharp features no



With the silent form of Herbert Strong once on the table and at his complete mercy, he lost no time. His sallow face was distorted into a covetous mask now.

longer annoyed her. Nor did his bony, skeleton-like fingers and rasping voice cause her to flinch in revolt as they had at first.

Her indifference to all these things might have been attributed to the fact that he paid her an excellent salary, even for a graduate nurse. But that was not the case with Dot Faversham. She was in sympathy with his great work and was more or less of a philanthropist herself.

Dr. Lape never appeared in public. Sensitive to his deformities, he shunned public gaze like a recluse. This could have been attributed directly to his early life as a child, when he had been the butt of scorn and ridicule from his playmates. After the briefest college education a student had ever received with high graduation honors at Bloomfield, he had retired to his family home which stood in a great pile of stone and concrete at the very end of a lonely street. There he had begun his life's work and his townsmen seldom saw him.

He went about his work with a cool indifference that immediately characterized him for just what he was, a cold, undemonstrative man. To Dot Faversham, the only bit of sunshine about the big stone mansion, he seemed a man entirely without emotion. He seldom smiled, at least not in recent months. And of late he appeared to have become even more cheerless and undemonstrative, if such a thing were possible. He was just stone-cold in all things. Or so he seemed.

But Dot Faversham, just twenty-three now, with hair as golden as a New England sunset, had no way of penetrating his shallow, inscrutable mask, to see what kind of a fire burned there. Had she been able to do that she would in all likelihood have deserted the place and never returned.

Until one gloomy, blustery day dur-

ing the winter just past, she hadn't suspected that beneath his twisted chest beat a human heart at all. He seemed so unearthly frigid. But out of clear sky that day, as if he were dealing with some cold professional problem, he had asked her to marry him. There had been no preliminaries. Nor did he even profess love for her. He simply asked her in his sharp, rasping voice to become his wife. It was her first hint that he even regarded her as more than he might consider a scalpel or a pair of tweezers.

Needless to say that she was completely startled and shocked at first. Then frightened, she looked at him to see if he were serious. He was, as in all things. But he made no attempt to touch her. He just stood at his laboratory bench and feasted his sunken eyes upon her. She felt them piercing to the depths of her soul.

By sheer force of will she overcame her fear. Pity took its place. He sensed it instantly, even before she spoke, and she saw the corners of his thin mouth grow firm. A strange light sprang into his eyes. He might suddenly have gone mad.

"Oh, Dr. Lape!" she had breathed. "You should not have asked that. It is so impossible——"

"Impossible because I am a freak, Miss Faversham?" he had interjected with his true professional indifference. He might have read her mind.

"That is an unfair question to ask," she replied readily. "You are a very brilliant man, Dr. Lape, and if I loved you, nothing else would matter. But I do not love you. You have never hinted that you even regarded me in that light. It could never be, anyway, for I am already engaged to another man. We expect to be married in June."

"Engaged, Miss Faversham?" Lape had not so much as raised an eyebrow in either amusement or surprise. He simply

stared at her fixedly. "How interesting! And who, may I ask, is the fortunate benedict?"

"Of course, you have a right to ask," she managed to smile sympathetically. "Possibly you have heard of him. He conducts the Strong Physical Culture Institute in the city. His name is Herbert Strong."

"Herbert Strong?" Lape rasped. "Ah, yes, Miss Faversham! I have seen his pictures in the health magazines. He is indeed a man of powerful physique. He is very fortunate—fortunate in two ways, Miss Faversham, in that he is superbly perfect physically and is to have such a charming girl as yourself for his bride! What would I not give to possess such a marvelous body and such a rare flower for a bride!"

"Oh, I'm sorry, Dr. Lape," Dot had breathed. "You should not have brought up the question. I had not intended to tell you of our plans until the last minute—"

"And left me in the lurch for an assistant, Miss Faversham?"

"I would have given you ample time to obtain another nurse," she had told him. "Perhaps now you will want to get her immediately—"

"I could not get along without you, Miss Faversham," he interrupted her to say, a habit she had never liked in him. It bordered on mental-telepathy, smacking strangely of the supernatural. "I have no thought of making a change on my own initiative. You will remain on duty, of course, until your wedding day?"

"As you wish, Dr. Lape," she had replied, relieved, "but only on condition that any suggestion of marriage between us is never to be brought up again. I may find it hard to remain under any other conditions."

"My word on it, Miss Faversham," as he spoke she thought she saw the lips

tremble ever so slightly. "It never shall—between us. It was stupid of me to even dare hope that any girl might consider marrying a man so horrible to look upon as myself." He paused to shrug his misshapen shoulders hopelessly. "Oh, well, he added, "there *may* be a way out for such a hopeless case."

She had studied him curiously for a moment, wondering just what he meant. Was he considering suicide to relieve himself of the monotony of living alone? Hardly that! Dr. Lape was too well fused with his work to even think of such a thing. Yet the way he expressed himself continued to worry her for weeks thereafter. She had expected almost any morning to report at the big mansion for work, and find him the victim of his own hand. Instead she found him laboring harder than ever.

During the ensuing months he had never broached the subject again. He kept his word as he might a solemn oath. As far as she could tell he might have forgotten the whole thing. But she did not know what thoughts lay behind his lackadaisical visage. Nor did she know that his love for her had become a form of madness to possess her at any cost. She was aware, however, that a great change had come over him since the day she had spurned him. He went about his tasks like a man living in another world, never smiling, seldom speaking. His eyes seemed more shrunken than before, and there were dark patches beneath them, suggesting irregular rest and lack of sleep.

She guessed that he was working at night on some private experiment. But in her routine work of caring for the living experimental subjects confined in the big test tubes in the laboratory, she saw no material evidence of it. She might have long since resigned her position—and she secretly wanted to—yet remained on the job for the single rea-

son that a bride needs many new things for her wedding. Her parents could not supply them for her and the portion of her pay check not needed at home, went for the filmy things a prospective bride loves to purchase.

Spring had come at last. Dot, as her fiancé, Herb, liked to call her, worked happily in the thought that June and its significance was near at hand. In keen anticipation of the coming event, Herb called for her each evening at the big mansion and drove her home, driving slowly through quiet lanes of tall poplars that were showing signs of life once more.

As expected of a physical culture instructor, Herb Strong was a powerful, muscular man with clean-cut features to match his marvelous physique. Young, bubbling over with enthusiasm, he was ruddy-faced and the envy of many a youth and man less endowed with that kind of human body that inspires quick admiration. His hair was as dark as his eyes and as unruly as he was boyish. He was in the neighborhood of twenty-nine or thirty and had made quite a name for himself in college football. A dislocated shoulder had taken him to the hospital where Dot was serving her time at training. There they had met. They were well-matched, folks said.

They made many plans for the future, during their slow rides in the evenings, and he spoke of a buyer for his school. He expressed a desire to sell out and go to New York to establish a gymnasium for rich business men and engage in correspondence-teaching as a side line. She was thrilled at the prospect.

But never once did she mention to him Dr. Lape's cold, unexpected proposal to her. Herb Strong was inclined to be quick-tempered and being in love, he might not understand. She kept the incident secret. In fact she had

almost forgotten it in planning for the future.

But Dr. Merton Lape had far from forgotten that he wanted Dot Faversham, among other things, more than anything else in life. Had she been able to watch over his nightly experiments in a small laboratory in another room of the mansion, she might have understood that he meant to possess many things including herself. She did not know that for months now he had been secretly experimenting with the transmutation of matter. For many years Dr. Lape had worked theoretically on what might have been called Fifth Dimension Surgery in connection with transmutation. Had she been able to visit that secret laboratory in an upper wing of the house, she would have seen that during recent months he had devoted his cunning super-mentality to successfully materializing what once were theories.

One look at his experimental subjects confined in cages in that hidden laboratory would have convinced anyone that Dr. Lape had achieved the impossible. Only his mad love for Dot Faversham had caused him to take secret pride in his accomplishments along this particular line of endeavor. And what an accomplishment! It smacked of lycanthropy!

In those cages in the upper laboratory crouched strange beasts. There were cats that growled and barked like dogs! There were dogs that spat with all the venom of an enraged feline. And, too, there were monkeys that had successfully survived his weird Fifth Dimension Surgery tests in which the brain of one had been transplanted into the skull of the other and *vice versa!* Yes, Dr. Merton Lape would do anything to possess Dot Faversham and also—the superbly perfect physique of Herbert Strong! But in gaining posses-

sion of Strong's perfect body he must first remove the other's brain and replace it with his own, even as he had transplanted the brains of the cats into the skulls of his canine subjects!

Dr. Merton Lape cunningly and scientifically had it all worked out according to Hoyle. His plan was perfect. There could be no mistake. Dot Faversham was to be his bride unknowingly and with his brain safely tucked away in the great skull of Herbert Strong, he could enjoy her to the utmost! And in the process he would come into possession of a superbly perfect body! But what of his own twisted, misshapen form?

As he sat staring fixedly into the dead, soot-blackened fireplace waiting for Dot Faversham to report for the day's work, he silently evolved a plan for the disposal of his own ugly body. His cunning scheme, briefly enough, was just this:

In his Fifth Dimension Surgery, the two brains, his own and that of Herbert Strong, would be transplanted from one skull to the other simultaneously, leaving no scars and shedding no blood. Thereafter, he would have no use for the ugly thing that now contained his organs. Nor would he have use for the brain of Herbert Strong. After the *operation* the body of Dr. Merton Lape and the brain of Herbert Strong would simply die and it would look like a natural death, while Herbert Strong, with Dr. Merton Lape's super-brain in his skull, would live and enjoy life at its best. As for continuing to possess his own worldly possessions, all he had to do was to make a will in which, in event of his, Dr. Lape's death, everything was to go to Dot Faversham and her husband, Herbert Strong. That would give him possession of the big mansion and all that it contained, even after the death of his own body. As far as con-

tinuing with his scientific work was concerned—well, with Herbert Strong's body, he could mingle with his fellow men and enjoy himself. He had ample funds and his work along the material lines was practically finished. His books and their invaluable contributions to science proved that.

As far as Herbert Strong's private affairs were concerned, they too could easily be disposed of in a way free of suspicion. Coming into the fortune of Dr. Lape, Herbert Strong would be most likely to sell or abandon his physical culture practice and enjoy himself with leisure. He would not, with a fortune in the bank, be expected to continue toiling over the rolls of human fat that waddled to his school for reduction. The whole thing was as simple as rolling off a log.

A little mis-adjustment of the Fifth Dimensional Surgical apparatus where it connected with the nerve centers of his, Dr. Lape's, skull would forever prevent the brain of Herbert Strong from talking through alien lips. But that mis-adjustment would in no way interfere with the successful transmutation of his brain into Herbert Strong's brain-cup! It would simply destroy the other's brain and his own body and it would appear that death had come over Dr. Lape quite naturally. And he had heart trouble, anyway! But he had no near relatives who might contest his will or demand an investigation into his death. For that he was thankful, for he did not wish to tie up his fortune in litigation. He wanted to spend some of it on a honeymoon to Europe with Dot Faversham! He wanted to enjoy it with his stolen body!

"Now," he said silently to himself, staring into the fireplace, "all I've got to do is to get Herbert Strong here. That should be very easy—a quiet supper for the bride and her intended

groom, and *presto!* On the other hand, it might be best not to have Dorothy—Miss Faversham in the house. Perhaps I had better make other arrangements. Yes, that would be best. She might get curious during the transmutation and spoil it all. But the supper—I'll have it just the same and will invite Strong to come here the next day under the pretense of working on my old body! That's *the plan!* I will let Miss Faversham have that day off to shop. I think a pre-wedding present of, say a hundred dollars, ought to keep her away from here. Then when she comes back to work, she'll simply find my old body while I, as Herbert Strong, will be at my school waiting developments!"

He might have settled back and laughed with satisfaction at his own cunning. But Dr. Lape was too tired, fagged out from his nights of painstaking labors, to laugh. It was not in his nature to be gay, even with himself. What he did do, however, was to snatch up a health magazine that lay in a rack attached to his chair and thumb coolly through the pages, until he came to a picture of Herbert Strong printed on one of them. Then a gloating look sprang into his sunken eyes. The picture of a strong, masculine body had always fascinated him, and how he had longed to have such a body as his very own! Now, thanks to his own genius, it was within the realms of possibility. More than that, it was about to materialize into more than longing.

As he sat staring at the picture of Strong, who was posed like Atlas with the world on his broad shoulders, it was easy to see that Dr. Merton Lape contemplated something untoward. His face was no inscrutable mask now. His sunken eyes gleamed murder. And he would murder to possess a body like that of Herbert Strong and a girl like Dot Faversham for his bride! Strangely

enough, he never paused to consider what crime he might commit in stealing the body of Herbert Strong. In taking his own life as he planned to take it, there seemed no crime. If there was, who could prove that a crime had been committed?

Until he heard Dot spring the latch on the front door, he sat gloating silently over the picture. Hearing her, he quietly laid the magazine aside and stepped to one of his big test tubes. There she found him studying the contents of the tube.

With a cheery "Good Morning, Dr. Lape" she deposited her wraps in a laboratory closet, flung back a vagrant red curl with a deft touch and stepped lightly to his side. Already garbed in the solid white of her profession, she was ready for work. And much to her astonishment she received a broad, cheery smile from her employer. It was the first time he had smiled in, let her see now—two months! But Dr. Lape could afford to smile at his best now. Isn't a man's intended bride entitled to a smile from him occasionally?

"Good morning, Miss Faversham!" he rasped cheerily. "I have been waiting for you. There is much to be done today and the work must fall upon you. I have been troubled with insomnia lately and I am very tired. I will outline your duties and retire."

"You look very fatigued, Dr. Lape," she smiled back sympathetically. "You have been working too hard. I am glad to see that you have not resorted to opiates as often happens with worn-out physicians. I shall follow any instructions you give me for the day."

"Good, Miss Faversham," he said, running his practiced eyes over the subject in the tube. That subject would have filled a layman or laywoman with quick horror, for it was, in their entirety, the internal organs of a human

being, living, breathing and feeding with the same regularity as any confined in a normal body! But Dot Faversham was accustomed to such things since coming into Dr. Lape's employ. "I have complete confidence in you," Lape continued. "You have constantly proven your ability to handle any situation that arises among my experimental subjects. This time, however, it will require your utmost skill to keep alive Subject Number 3 in this tube. I have been observing unquestionable signs of trichina in the muscles about the heart. Today the symptoms are more pronounced and the first thing you must do is to begin treating the subject. You recall that I explained to you thoroughly that *trichinosis* is the curse of humans and swine. The *nematoid parasites* in this subject's heart tissues and muscles must be removed. Do you think you are capable of doing it?"

"I have removed them on several occasions from Subject 5, Dr. Lape," she said earnestly. "I can manage quite well here. Now you run along and get some rest. I understand the situation perfectly."

"Good, Miss Faversham," he rasped again, wearily. "I know you do. For to-day and to-morrow you will give your entire attention to Subject 3. If it shows no improvement, we shall remove it from the solution and perform a general removal of the parasites."

Dot looked at him a bit disappointedly.

"I was going to beg off duty to-morrow, Dr. Lape," she said quietly. "You remember I'm to be married this month, on the 20th, to be exact. I have some last minute shopping to do——"

"How stupid of me, Miss Faversham!" Dr. Lape rasped. "Here, the best assistant I ever had is going to be married and like a stupid ass I failed to show some consideration!" Inwardly

he was smiling contentedly. Things were playing into his hands. "Of course you may have a day off!" he added. "But if you make it day after tomorrow, I will give you a little pre-wedding gift that may help you to buy the things necessary for a June bride!"

"Thank you, Dr. Lape!" she beamed. "You are very considerate. It will be day after tomorrow, then."

"Excellent!" he said, pulling out a check book and scrawling in his bold hand a check on his bank. "Here is something to show my keen appreciation for your helpful assistance during the past years. I have made it out to you for five hundred."

"Five hundred dollars?" she accepted the check in amazement. "Aren't you a bit extravagant, Dr. Lape?"

"Not a bit of it!" he laughed. It was like a cold cackle. "If I had paid you near what you are worth, it would not have been too much! Take it and enjoy yourself with my heartiest compliments!"

He promptly turned away, leaving her standing at the test tube, staring incredulously at the check. It would more than pay for her trousseau and the kind of a colorful wedding she had always wanted. At the door he paused, looked at her cravingly and spoke again.

"It would please me immensely, Miss Faversham," he rasped cunningly, "to have you and your fiancé dine with me to-morrow evening—just a little pre-nuptial dinner. Can you arrange it?"

"We shall be delighted, Dr. Lape," she enthused, wondering if all the while she had been mistaken in her presumption that he was a man without a heart. "I shall phone Herbert this morning and make sure. It is very kind of you."

"Good!" Lape rasped. His sunken eyes gleamed. "I have wanted to offer my congratulations to your fiancé. To-morrow evening, then?"

"Of course," she replied. "We shall be here at eight."

He waddled away. But Dr. Lape had no thought of retiring. Much work was yet to be done before the fatal hour when his deformed body would be found dead and his powerful, cunning brain assume control over the superbly perfect body of Herbert Strong. He took himself immediately to his secret laboratory. There the strange canines hissed at him like angry felines. The cats barked and the two monkeys chattered through their bars. His first acts were to get rid of them. It would not do to leave such evidence of his handiwork and scientific skill behind to condemn him. He promptly chloroformed them and dumped the bodies into a waste chute that carried them into a roaring furnace in the cellar. He always did things thoroughly and he made a thorough job of burning his bridges behind him. As for the disposal of the Fifth Dimension Surgical apparatus, as intricate and astounding an instrument of science as man had ever conceived, which stood on a small table encased in glass, well, time enough to get rid of it after the transferring. That would be the first task falling to the new Herbert Strong! .

He spent the balance of the day destroying all other evidence and in framing his will and last testament. That evening, after Dot had been driven away by her fiancé, a local notary was called to the mansion to attest to the legality of the document. Thereafter, until the following evening, time hung heavy on his hands. He found sleep impossible in his excitement and anticipation of completely molding himself with the usurped body of another man. He avoided the laboratory, afraid to trust himself in the presence of Dot Faversham, lest she notice the trembling of his hands and grow suspicious. But when

evening came again, he had complete control over himself. An injection of drugs into his skinny arm saw to that.

At the quiet little dinner he had his first opportunity to study Herbert Strong at close quarters and was immensely satisfied with what he saw. In an immaculate tuxedo, Herbert Strong renewed his envy. He had the body-build of a Greek god and in contrast with his own distorted frame, he was a veritable giant. As they ate he silently studied the shape and size of his large head and masked his satisfaction with an unaccustomed smile.

Never before had he seen Dot Faversham look so beautiful. Her golden hair was set off effectively by her silver evening gown. More than ever he felt his desire to possess her, and more than ever he meant to do so. Much to Dot's amazement he proved to be a perfect host and he had given her a dinner that might have graced the table of the richest family in the city. But Dr. Lape was not a man of many servants. He had only his housekeeper, a gentle, considerate old lady who had been his personal nurse during his childhood. She was constantly at their service and seemed to take a keen delight in the occasion.

Dinner finally over they retreated to the library where they discussed casual topics, until Dr. Lape cunningly injected the subject of physical culture training into the conversation. Instantly Herbert Strong became alert. Nothing interested him more, unless it was Dot Faversham, than his own profession. It was, Dr. Lape quickly learned, his religion. He believed in it devoutly as the perfect cure for many of man's minor ailments. To this the scientist agreed without comment. And when the party broke up he had Herbert Strong's promise to come at nine o'clock the following morning, to see what could be done to-

ward strengthening his distorted body. His guests gone, Dr. Merton Lape rubbed his bony hands contentedly, slipped out of his tuxedo and donned a smock. With infinite care he carried his Fifth Dimension Surgery apparatus downstairs to the main laboratory where he set it up at the head of two operating tables placed side by side. After checking it over carefully he retired to his room, chuckling contentedly to himself in his dry, rasping cackle. For hours thereafter he lay on his bed and visioned himself enjoying, as Herbert Strong, everything life had denied him. It was almost dawn when he fell into a fitful sleep. It gave him little rest and he awoke to find the turning point of his life close at hand.

True to his promise, Herbert Strong, having hiked from town for the exercise, rang the doorbell promptly at nine o'clock. Dr. Lape himself answered the door.

"Good morning, Herbert!" he greeted with all the cheeriness he could muster. "I see you are a man of promptness. I like promptness. Come right in and we shall get down to business immediately!"

"Do not hurry on my account, Doctor," Herb gave him a smile, revealing even, white teeth that instantly made him conscious of his own large, yellow ones. "I've got all the morning. My assistant is on hand at the gym to handle my clients there."

He entered the mansion as incalculably as a fly might dart into the invisible web of a spider. Dr. Lape, fortified for the occasion by an injection of mild drugs, let him into the laboratory. His sallow face was a mask again, inscrutable, cold. His sunken eyes glittered in their deep sockets like chips of blue glacial ice. And he was, without undue preliminaries, ready to handle the situation as promptly and thoroughly as he did everything else. Hidden in one

of his bony hands was a small hypodermic needle. He stepped aside to allow his victim to enter first.

The instant Herbert Strong passed through the door of the laboratory he felt something sharp prick his right arm. With an involuntary grunt he glanced over his shoulder to see his supposed client leering at him with hypodermic needle poised as if for another jab.

"Did you stick me with that thing, Doctor?" he tried hard to grin jokingly through his astonishment. "What is this, a joke?"

"It is no joke, Herbert," Dr. Lape rasped, watching his eyes closely. Already they had become glassy. He chuckled contentedly. "You don't think I had you come here just to try to put strength in the distorted thing I call my body, do you? You ought to know that is impossible, or do you, my friend?"

"Of course I know it, Lape!" Herb, sensing danger flung back. He ran a trembling hand across his forehead. It was covered with sweat, an unmistakable indication of weakness emanating from the powerful drug that had been injected into his blood. "But it's not my business to deny anybody the right to my services. What's the idea? You tricked me into coming here!"

"I could think of no other way to get you here, my friend," said Lape unemotionally. "All is fair in love and war, isn't it?"

Herbert Strong was awe-struck as he tottered on his heels.

"What the devil do you mean?" he demanded with quick fury.

"I mean, Herbert," Dr. Lape said emphatically in a voice that sounded like the rasp of steel against steel, "that I, too, love Dorothy Faversham and intend to marry her!"

"You — you — marry Dot?" Herb Strong was flabbergasted. But he could not help laughing despite the dizziness

that was sweeping over him. "That's the funniest thing I ever heard, Lape! You and Dot—getting married! Why, you wizened little anemic, I've a notion to turn you inside out!"

"Why don't you, Herbert?" Lape challenged with the same cool indifference. "In a few more seconds you will be just so much putty in my hands! Do you know what I intend to do, Herbert?"

"Murder me in cold blood, I suppose!" snapped Herb helplessly. He wanted to sit down now. His legs were weak and his knees were trembling. He fought gamely to prevent his inevitable collapse to the floor.

"That, my friend," the love-mad scientist said, "is not my intention. I have other plans. I am going to usurp your body, Herbert Strong! I'm virtually going to steal it and when it is in my possession and under the domination of my own brain, I'm going through with your plans for marrying Miss Faversham! Do you follow me, Herbert? No! I see that you do not! I will speak plainer. I'm going to remove your brain from your skull and transplant my own in its place! Now you follow me, don't you, my friend? It is all so simple."

Herbert Strong blinked at him incredulously, wondering if his ears were playing pranks on him.

"Why, you low-down murderer!" he raged suddenly, feeling blackness settling down over him. He made a feeble attempt to grab at his tormentor's throat, but his clutching fists fell far short of their mark. He slumped down to the floor, feeling as if he were falling rapidly into a bottomless, stygian pit.

Chuckling, Dr. Lape quickly locked the door. Then with an amazing exhibition of strength for such a twisted body as his own, he lifted up the inert form of his victim upon one of the operating tables. As if impatient to pos-

sess that superbly perfect physique as his very own, he worked speedily, yet with an expertness born of long practice.

With the silent form of Herbert Strong once on the table and at his complete mercy, he lost no time. His sallow face was distorted into a covetous mask now. His sunken eyes blazed with the kind of a look that might have been expected of a miser. Quickly he placed a metal helmet over the other's skull, making sure that its internal electrodes fitted snuggly against his frontal, parietal and occipital lobes! Other electrodes, if such they were, fitted firmly against the skull directly over the cerebrum and cerebellum. Along the seams of the cranial bones ran literally dozens of other small discs to which were attached as many tiny tubes and wires connected to the Fifth Dimension Surgery devise at the tables.

The Fifth Dimension Surgery apparatus was something in itself to inspire wonder. To the layman it would have looked like some sort of a scales. But instead of having saucer like pans on its metal arms, it had ball-coils. Nobody but Dr. Lape understood or could explain its intricate details, though it was easily seen to derive its strange power from electrical energy. In truth, it did, but in vibration only. Dr. Lape had discovered the Fifth Dimension in electrical vibrations and into this apparatus he had embodied them, accomplishing as a result, the impossible transmutation of matter from one body to another without blood, scars or other tell-tale evidence of an operation.

As delicate and fragile as some miniature Swiss watch movement, the instrument was filled with tiny coil-springs, pendulums and platinum wires. Under each of the two ball-coils was a small, green, vacuum tube which apparently controlled the vibrations as they entered the dual helmets, the one already

snugly fixed on Herbert Strong's skull and the other which Dr. Lape was to fit over his own head.

One might wonder how the transmutation could be performed without the assistance of a third person. But Dr. Lape had seen to that. The whole thing was to be controlled by an amazing robot switch-timed by a stationary chronometer. An amazing, brilliant man, was Dr. Lape, and he overlooked nothing, as was his custom.

Satisfied that the helmet was attached perfectly to Herbert Strong's head, he promptly placed himself on the other table. Sitting there, he donned the second helmet. Perfectly calm, supremely confident and fearless as to the outcome of his piracy of another man's body, he coolly jabbed his skinny arm with his hypodermic needle, then turned on the robot switch. Everything was set now for the transmutation, even to the slight mis-adjustment of the wires that controlled all life on his table. He was perfectly aware that when the robot had gone the cycle of its time, he alone would be a dead man. But Herbert Strong would be alive and in his cranium would be his, Dr. Lape's, own super-brain!

The instant he turned on the robot switch, the Fifth Dimension Surgery apparatus went into action. The twin vacuum tubes glowed softly. The ball-coils began to vibrate, gathering momentum gradually. Pendulums swung, slowly at first, then rapidly as seconds ticked off on the chronometer.

As Dr. Lape succumbed to his injection of drugs, he felt a strange vibratory movement in his brain, as if the Fifth Dimension apparatus was painlessly loosening the tissues and preparing it for transmutation. With a smile on his thin, colorless lips, he became inert, confident that when he awoke he would be in full possession of a new and superbly

perfect body. And Dot Faversham, unsuspectingly, would be waiting for him with open arms!

As the vibrations tugged at Herbert Strong's brain, he grew tense. His strong constitution was fighting at the drugs that the other had so ruthlessly and treacherously injected into his blood stream. Vaguely he was aware that something was wrong. As the vibrations increased he felt a severe, deadening ache at the base of his skull. In a stupor he tried to figure out what was wrong with him, but got nowhere in that direction. Yet he was sure something was tugging at his brain, as if some invisible instruments were cutting its tissues and nerve centers and pulling it in a sort of suction from his skull.

A sever stab of pain suddenly struck at the backs of his eyes. He wrenched as if shot and as he did so he rolled clear of the table. The helmet was yanked from his head. It clattered on the floor beside him, rolled a few inches and came into contact with the metal legs of the table. Instantly there was a blinding flash from the laboratory. Green flame wiggled and crackled over Dr. Lape's great Fifth Dimension Surgical apparatus. Platinum wires melted. The green vacuum tubes burned bright for an instant and exploded. The distorted body of Dr. Lape twitched on his table. Every muscle in his withered body seemed to tighten. Suddenly he relaxed with a dismal sigh. His sunken eyes opened wide and his jaw sagged.

Dr. Merton Lape had finally made an error! Thorough in all things as he had been, he had overlooked one thing! Time! Time and Herbert Strong's powerful constitution! He should have administered another dose of his drug to the man whose body he had so painstakingly labored to steal. But in his excitement and impatience to come into

possession of that body, he had overlooked that all-important detail! His would-be victim simply revived ahead of schedule as a surgical patient might emerge too soon from his ether. He lay on the floor in a nauseating stupor, aware that he was there, yet having little or no control over his faculties.

Short-circuited by the contact of the helmet with the leg of the table, the Fifth Dimension Surgical device went up in smoke, its fragile machinery melting into worthless masses as it did so. Dr. Lape might have strapped the body of his intended victim to the table and prevented such a catastrophe. But he had been aware that such a precautionary measure would have rendered him helpless after the transmutation. He would have been unable to loosen himself! His own distorted body dead, Herbert Strong would have been compelled to lie on the table, helplessly strapped, to await the coming of Dot Faversham to free him. The cat would have escaped the bag then.

Just how long he lay on the floor, Herbert Strong had no way of knowing. His wrist-watch had been smashed in his fall. It seemed that he had lain there for ages before he suddenly heard the shriek of an auto horn somewhere outside. It was the horn of his own car which he had loaned to Dot that morning, her own auto being temporarily out of commission. She was to call for him at the Lape mansion at noon. Once again the horn blared out its call. He struggled to rise like a drunken man. His senses reeled and all the strength seemed to have fled from his powerful legs. His head ached violently and his eyes felt as if they had been jabbed with needles. He managed to get to his knees and then he collapsed back. Outside Dot tooted again a bit impatiently. If he could only get a drink of water to wet his burning lips and throat! He

tried again to rise only to sink back with swimming senses.

Wondering if something was wrong in the big house, or if her fiancé had already left the place and returned to town, Dot hurried to the front door and admitted herself with her own key. Inside, the place was quiet as a tomb. Herb's cap, hanging on a rack in the hall, caught her eye. She knew then that he was still in the house, for a man seldom walks off leaving his hat. She went straight to the library. It was deserted. She wondered where the housekeeper was. But Dr. Lape had also given her a day off that he might have absolute privacy during the transmutation.

Inspired with the idea that the two men might be in the laboratory, she went there. The door was locked. As she inserted her key she heard a low groan from within. Sensing something wrong, she hastily flung open the door. Instantly she saw Herbert Strong struggling gamely to attain his feet. She rushed in with a cry of alarm.

"Herbert!" she cried anxiously. "What has happened?"

He looked at her stupidly.

"Water!" he muttered. "Get me a drink, Dot, please!"

She ran quickly past the tables toward the faucet. As she did so she had her first glimpse of Dr. Lape. She needed only one passing glance at his face to tell her he was dead! His jaw sagged and his eyes were popped wide open. She stifled a sob, snatched up a glass and filled it from the faucet. Herb Strong gulped its contents in a single swallow. From a medicine chest she grabbed a bottle of smelling salts. Strength returned swiftly to Herb's body under its powerful effect. She helped him up.

"What has happened, Herbert?" she

demanded again, glancing at Dr. Lape and shuddering.

"You've got me there, Dot!" he said, holding his aching head in his hands. "I don't know, except that Lape had a crazy idea that he was going to steal my body! Imagine such an insane idea? He was going to remove my brain and put his own in its place! Then he was going to marry you! That's all I know, except that the minute he got me in here he jabbed me with a hypodermic needle. I just passed out until I saw, or thought I saw, a blinding flash of light. Then I found myself on the floor. Since then I've been wondering if he actually did transplant his brain into my head! I guess he didn't, for I recognized the sound of my car horn when you tooted it!"

"Oh!" Dot gasped in astonishment. "How terrible! I might have known he was up to something! He was working at nights! I'll bet he was working on something to make it possible for him to steal your body! That's what he meant when he told me there might be a way out for him after he had proposed

marriage to me and was promptly rejected!"

"Did he propose to you, Dot?" Herb scowled.

"Yes, Herbert," she replied. "I might as well tell you. It was during the winter and his proposal came to me as a complete surprise. I was stunned!"

"Humph!" Herb grunted. "He had a lot of crust, trying to steal my body and my girl! But he'll never try it again! Look at him! His face is burned black!"

Dot shuddered, grasped his arm and led him away.

"Perhaps it serves him right, Herbert," she sobbed. "But he really was a brilliant man. He contributed many invaluable things to science. He should be remembered as a great scientist."

"You mean he should be remembered as a body pirate, Dot!" grunted Herb. "I hate to think what would have happened to me if he had succeeded!"

"Don't, Herbert!" she whispered. "Just think of our wedding day and what it means for us!"

"As if I could forget that, Dot!" he grinned.

THE END

What do you know?

1. How might a record flight by airplane compare with Jules Verne's story entitled "Around the World in Eighty Days"? (See Page 9.)
2. The navigator in sailing vessels had to study the trade winds; can the air pilot pursue a similar system? (See Page 10.)
3. What do you know about the stratosphere and its availability for air travel? (See Page 10.)
4. How does man's vertical range of travel compare with his horizontal limits? (See Page 10.)
5. Can you name Saturn's moons and give their number? (See Page 13.)
6. What are the distances of the nearest and of the farthest of the moons from the planet? (See Page 13.)
7. What is the earth's centrosphere? (See Page 34.)
8. What are fumaroles? (See Page 24.)
9. What are the chemical formulas of sulphurous and sulphuric acid? (See Page 34.)
10. What are the powers of radium? (See Page 41.)
11. What characteristic of animals on the Galapagos Islands is attributed to them by naturalists? (See Page 49.)
12. What is surface tension and how does it act upon liquids? (See Page 57.)
13. Give examples of the action of surface tension. (See Page 57.)
14. What is the action of simultaneous wave series upon each other? (See Page 63.)
15. What is the name of the action? (See Page 63.)
16. What is the action of a photoelectric cell as affected by light or its absence? (See Page 82.)
17. In referring to the monster in Mrs. Shelley's famous novel, is Frankenstein the monster? (See Page 116.)
18. What is the cause of trichinosis? (See Page 128.)
19. Should an alleged discovery in many cases be termed a theory? (See Pages 118-9.)
20. What was for several years the theory of the constitution of the atom? (See Pages 118-9.)
21. Should the latest theory of the atom be taken as final? (See Page 139.)

DISCUSSIONS

In this department we shall discuss every month topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25¢ to cover time and postage is required.

**A Most Delightful and Characteristic Letter from a Correspondent of the Female Order
Editor, AMAZING STORIES:**

Reviewing the four latest issues of A. S., I have come to the conclusion that the contents do full justice to the name. Congratulations on the Editorials each month. They are very interesting. Now for the stories. "Life Everlasting" by David H. Kellar, M. D., was a beautiful story. "The Velocity of Escape" and "The Moon Pirates," two fine interplanetary tales. Also "The Master Minds of Venus." "The Pool of Life" by P. Schuyler Miller deserves recognition. Really unusual. "The Moon Waits," another distinctive interplanetary narrative. A. S. seems to have gone "space conscious" (?) Well more power to it, for what is more amazing than the undiscovered mysteries that lurk in the dark void of "outer-space." So come on you space-travelling authors, keep us in touch with the discoveries of your imagination. And last but by no means least, "Through the Andes," by A. Hyatt Verrill, has at last drawn to a glorious climax, a wonderful tale while it lasted. I also enjoyed "Eighty-Five and Eighty-seven," and "Noekken of Norway." "Land of Twilight," er—ah another space tale, promises to be good.

Now for some war (?). Challenge accepted! choose your weapon. For the benefit of the audience (readers) I will repeat the challenger's words (argument on the size of A. S.) Quote—"I challenge any reader to give any real reason why the small size is better than the large. John S. Steadman" (A. S., Oct.) Unquote. Pistols and swords would put a stain on the clean reputation of A. S. and if disintegrators were used, Ed. would have to sweep up the ashes (heaven knows he has enough to do outside of that). So the only thing left is words. Are you ready? all right. First of all get out a pile of your "aristocrat" A. S. books. Now a pile of "undignified" sized ones. Set them up between book ends, in two separate piles, side by side. Now walk back five feet and view them. Isn't the smaller size neater looking? Doesn't the tall pile look sort of er—skinny? what? Next, take one of the "aristocrats" in your hands, doesn't it flap uncomfortably over your hands if you hold it in the middle? And plop in the center when you hold the ends?

Now take one of the "undignified" ones and hold it. See how it snuggles "just so" in your hands? Isn't it more easy to hold? Last of

all compare the pages and number of stories. And well, any way what difference does the size make? A. S. will be good old A. S. whether it be twelve inches high or six inches high. And it will still retain its dignity in any size as long as the words AMAZING STORIES appear across the front.

The covers were all fine except the one on the Oct. issue made me kind of uncomfortable. May A. S. survive long enough to gain some *Martian* and *Venerian* readers. (But I am afraid our dear old Ed. won't be the editor by that time! Many regrets! Also we present readers will be under the sod many centuries by that time.) At any rate LONG LIVE A. S.

Miss Ethel M. C. Poppe,
Box 727,

West Brownsville, Pa.

(We have the good fortune of receiving the kindest letters from members of the very interesting, fair sex such as you write us with its lively bits and what we may call its kind treatment of the Editors. We do not write these comments simply to compliment our correspondent and you have stated your case so nicely and completely that we do not feel that we can add to it. It is a comfort to find that you approve of the smaller size.—EDITOR.)

**Commendation in Well-Thought-Out Sentences
—An Encouraging Letter
Editor, AMAZING STORIES:**

I would like to say that your editorial article under the heading "The Sphere of Vapor" is very instructive and interesting. I would like to see more of them in your future numbers.

"The Moon Waits" is another interesting subject in which are found accounts of actual events mixed with some fiction more or less fantastic or extravagant but nevertheless good enough to hold the readers attention.

"The Land of Twilight" seems to be a very good serial, judging by the first seven chapters of part one; I like the style and the way the story is started, keeping the readers in suspense and expectation for the following events of the story. It is filled with adventures that keep the imagination alert. There is also the "facts mixed with fiction" and of course the human side of the story that gives the characters a very realistic atmosphere.

I will close these lines thanking you for giving us a new author and for keeping those

that are of real merit with your magazine.

Joseph J. Valdes,

90 Yale St.,

Hempstead, L. I., N. Y.

(We thank you for your appreciation and venture the hope that we have in some measure deserved it. We certainly are doing the best that is in us to please a sometimes critical clientèle. In your case all our work seems to be acceptable.—EDITOR.)

**Comments on Mr. Verrill's Story,
"The Heart of the Andes"**

Editor, AMAZING STORIES:

My congratulations to you and A. Hyatt Verrill. "Through the Andes" is, in my humble opinion, a masterpiece of science fiction.

The fact that Mr. Verrill's premise as to the origin of the Aztec and Toltec peoples coincides with the Book of Mormon takes nothing from the originality of his story. The plot is well conceived, the theme is carried through nicely and the characterization is excellent.

John Francis Kalland,
1686 E. Minnehaha St.,
St. Paul, Minn.

(In Mr. Verrill's story, which you refer to, we particularly admired the depiction of character. Some of it was done in a masterful way, especially the wild western cowboy personality. Mr. Verrill is an absolute authority in the archaeology of the countries in his stories.—EDITOR.)

**A Pleasant Letter from the Far-Off
Dominion of New Zealand**

Editor, AMAZING STORIES:

This is just another letter from N. Z. to show you that your (sorry I mean *our*) magazine is appreciated even in this far corner of the world. I have heard that a large number of Americans think that N. Z. is a town in Australia; if that is so, it is sure some little town. It is inconceivable to my mind that anyone could think that a country like N. Z., which is larger in size than England, should be thought of as a town in Australia.

But wait! I am wandering from the subject "Our Mag." I've been a silent reader of AMAZING STORIES for five years now. I was first attracted to it by a nice bright and truly amazing cover. Many readers complain that your covers are too lurid and they want quiet covers instead of amazing ones. Well what I want to know is why do they read the magazine at all. The name of the magazine is AMAZING STORIES and when a person buys that magazine he expects to be amazed, so the cover is a good start if you make it sufficiently amazing and the brighter the better. Some covers which I think were really outstanding, in fact super-excellent were: February, September, August, 1927; January, No-

vember and December, 1928; January, February, October, November, 1929; January, March, September and November, 1930; March, April, June, October and November, 1931; February and May, 1932 (Super, Super Excellent, September, 1932; October, 1933; January, February, March, April and July, 1934).

The cover picture for the June, 1934, issue of AMAZING STORIES wasn't in keeping with the name of the mag at all.

Now about the stories. I enjoy eighty-five percent of them and as for the others I suppose some one else enjoys them.

I wish you would reprint the "Moon Pool" by Merritt again, but I suppose the cost of reprinting would be too high altogether to warrant doing that. I've read both the "Skylark" stories with much enjoyment and even though I still have the mags with those stories in I wouldn't mind at all if you reprinted them again especially as one of your competitors is printing the third Skylark story. Lots of readers who read "Skylark of Valeron" will want to read the earlier adventures of the Skylark so there's your chance.

The Professor Jameson stories are great. Please give us more. Some great stories which appeared in A. S. in the past are: "The Sixth Glacier" by Marius; "Futility" by Capt. S. P. Meek; "The Chamber of Life" by G. Peyton Wertenbaker; "Colour Out of Space," "Into the Green Prism" and the sequel "Beyond the Green Prism" by A. Hyatt Verrill; "The Metal Horde" by John Campbell, Jr.; "The Green Girl" by Jack Williamson; "The Valley of Titans" by L. A. Eshbach; "The Stone From the Green Star" by Jack Williamson; "The Lost Machine" by John B. Harris. All Neil R. Jones' stories and David H. Keller's and E. E. Smith's and A. Merritt's.

I did not like any of A. Sigmund's covers and I am glad that they are now a thing of the past. I'd like to see the old AMAZING STORIES title back on the cover again, the one which started off with a large "A" and gradually dwindled off smaller and smaller. Is there any hope? If you don't hurry up and give us straight and even edges to our mag I'll—I'll—send you an earthquake. Surely it would not cost very much more for straight edges and it would improve the looks of the magazine 100 per cent, and also it would be one in the eye of your competitors.

May I draw your attention to a mistake in the numbering of the Quarterlies. The 1932 Fall-Winter Edition was numbered Vol. 5, No. 3, which was correct. The following issues were numbered wrongly as follows: 1933 Spring-Summer Vol. 6, No. 4. 1933 Winter Vol. 7, No. 1. 1934 Fall Vol. 7, No. 2. They should have been: 1933 Spring-Summer Vol. 5, No. 4. 1933 Winter, Vol. 6, No. 1 and 1934 Fall Vol. 6, No. 2. I was surprised that no one else pointed out this mistake to you.

I still need a few issues of AMAZING STORIES to complete my set, perhaps some of your readers can help me if this letter ever appears in the Discussions Columns. The issues I require are: Vol. 1, Nos. 1, 2, 3, 4, 5, 6 and 9. Vol. 2, Nos. 3, 4, 7 and 8. Quarterly Vol 1, No. 1.

Well I am afraid I'll have to close now. It has taken me five years to write this letter. I wonder if it will be another five years before I write again. Somehow I don't think so, but in any case you can always count on me as a staunch supporter of AMAZING STORIES.

Here's wishing you and your staff the best of luck and may AMAZING STORIES keep on amazing for many years to come and thanks for the many hours of enjoyment that I have had out of your magazine.

P. S. Just a little brickbat. Please don't publish any more of the stories written by Jules Verne or Poe. Even here they are procurable in the Public Library.

Jack Murtagh,
625 Nelson Street,
Hastings, Hawkes Bay,
New Zealand.

(It is quite amusing that anyone should be so ignorant of geography as to call New Zealand a town in Australia. It is true that there is nothing which a large number of Americans may not think, but we are inclined to believe that you do them an injustice about New Zealand. If you enjoy 85% of our stories, we are quite complimented. The old futuristic covers, which were tried for a while, have been definitely abandoned. They lasted about as long or perhaps longer than they were worthy to endure. The Quartlies come out so irregularly that the dating of them may seem staggering. You will probably find it difficult to get the very early numbers of AMAZING STORIES but your letter may bring results.
—EDITOR)

A Letter from Australia—The Magazine There and Its Slowness of Issue
Editor, AMAZING STORIES:

I have been reading your publication continuously for the last three years, but this is the first time I have ever dared to write. I have been aroused from my usual good-humored self, by these confounded reprints. Some readers, I note, seem unable to get them, but here in Australia every little bookstall has one or two copies. So, Mr. Editor, discontinue your reprints unless they be the lauded stories of your early issues (such as "Skylark Three," "Spacehounds of IPC," and stories about Arcot, Wade and Morey, etc.), otherwise your magazine is "A—1 at Lloyds."

Here in Australia, unless issues are three months old, the price is equivalent to 50c and last year it was equivalent to about 90c, so

you see most fans here read the August issue in November. So I can look forward to seeing this letter in the new year of your magazine, that is if you decide to publish it. I have one brickbat. I do not like Morey's covers and illustrations. (Let there be an outcry at such a statement!) Nevertheless I consider Wesso to be the finest science-fiction artist ever since this kind of fiction was started. Oh well, Editor, forgive me "Chacum à son goût."

Alan H. Bailey,
21 Canberra Avenue,
North Wollstonecraft,
Sydney, N. S. W., Australia.

P. S.—If anyone would care to write to me, I will answer their letters very gladly.

(If you will read our Discussions, you will find that there are many readers who enjoy reprints. But however that may be, we are practically giving no reprints. We do not see why there should be so much delay on our Australian readers getting their magazines. We will take it up with our Circulation Manager and we shall hope that he will get rid of the trouble. We should think that there will be many who would enjoy correspondence with a resident of the Antipodes.—EDITOR.)

Effect of a Letter Printed in Discussions—Suggestion About Reprints
Editor, AMAZING STORIES:

I wish to thank you for your courtesy in printing my letter in the Discussions Department of the October, 1934, issue of AMAZING STORIES. This letter concerned back numbers which I had to sell.

In your editorial comment under my letter, you mentioned that you had never heard whether this type of letter had ever done any good or not. I am now reporting. Immediately following the appearance of that issue on the newsstands, I was fairly deluged with inquiries. As a result, I have disposed of my entire collection which consisted of several hundred magazines.

While I did write to several names I found in the Readers Department of the various Science fiction magazines, most credit goes to the letter you published. Incidentally, I wrote similar letters to each of your rivals at the same time. One of them gave me mention, while the other ignored my request completely.

For my part, I can say that the printing of my letter produced exactly the result desired. Thank you again for your kindness in this matter.

And in closing, allow me to make one comment about the reprint quarterly. That is a fine idea. There were some great stories printed in A. S. in its early days. Why not print "The Moon Pool" complete in an early issue. Also, "The Land That Time Forgot" by Burroughs. Why not an entire H. G. Wells quarterly sometime? My suggestion would be

to use "When the Sleeper Wakes" as the long story; the "Invisible Man" and enough of his other short stories to fill the issue.

But, no reprints in the monthly, please.

Carl R. Canterbury,
1527—11th Avenue,
Moline, Illinois.

P. S. That idea of a reprint quarterly dedicated to the works of one author might not be so bad if extended to include several of your best liked writers. Coblenz, Keller, Vincent, just to suggest a few.

(We have made a point of publishing letters from correspondents desiring back numbers. Your good luck indicates that "Discussions" have a certain advertising value. What you say about reprints is quite interesting and will receive full consideration from us.—Editor.)

A Charming Letter from a Mother of Seven Boys

Editor, AMAZING STORIES:

Your magazine is surely improving and I think it is "The Aristocrat of Science Fiction." It was very good in the early days of its existence. Then in 1930-1931 the book rather slumped to my mind, but now it suits us in every way, size, cover and printing.

"Through the Andes" was very good, but then A. Hyatt Verrill is always good and he with Coblenz and Keller are my favorites.

I am a busy little housewife and mother of seven boys, but I am never too busy for science fiction's engrossing stories to "whet" my mind and they always teach me a lot too.

I have given away stacks and stacks of your magazines, with others, to high school boys and interested persons.

I wish I could get a hold of the Quarterly which contains "Seeds of Life" by Taine. I have some real old Quarters I would exchange.

Please print as many stories as you can by Verrill. The Discussions are the first part of the book that I read.

I don't care for reprints as I've read all of them and so the last Quarterly was a disappointment to me.

Yours for a long life and success in "our good magazine."

Mrs. E. J. Fox,
Box 34,
Orcutt, California.

(It is a comfort to have someone say that our magazine is improving. "The Seeds of Life" appeared in the Quarterly issue for Fall 1931. We will see if we can find it for you. As things are going now in this world of ours, it is pleasant to hear from a proud mother, and we know you are that, with your seven boys. More of Verrill's work will appear very soon. He is not only a good writer but an archaeologist. We are pretty certain that your letter will receive a response.—Editor.)

Mr. Skidmore Replies to the Criticism of Mr. A. C. Clarke, of England, Which Appeared in the February Issue in Discussions *Editor, AMAZING STORIES:*

Now, my British critic, you say, first of all, that I used the word "stratoscope" in "The Velocity of Escape." Score one for you, my critical friend! I intended to use the word "stratosphere." I dictate my stories rapidly and afterwards spend long hours correcting; but the word is an error.

Of course, I know there is no such word as "stratoscope" and be assured that I will turn a disintegrating ray on my secretary to punish her; and I will also have my own eyes examined and, if you insist, my brain box!

I'm fully aware that the troposphere is the first circle of atmosphere (ranging from 10½ miles in height at the equator and about 7 miles at the poles) and in this area the temperature decreases with approximately uniform rate from the earth's surface. The layer above this is called the stratosphere (in times past it was called the isothermal region). In the stratosphere there is no convection and it is estimated to extend to 30 miles.

I purposely created Cromwell as an inquisitive, and somewhat dumb assistant for the academic Millstein. Don't you see, my English, censorious friend, that Cromwell is made merely a foil; that I (the author) might expand and display my scientific knowledge?—or, the God's forbid, the lack of it!

In the "The Velocity of Escape" I merely had Millstein say: "Cromwell, I've a hunch! 'The Falcon's' factories are on that star (Sirius). In a few weeks we will take a trip to Sirius and look around." *Millstein did not go to Sirius.* I knew of the extreme heat on Sirius and its mighty distance; and I only mentioned Sirius because in the paragraphs preceding Millstein's unwise words, I had been proudly airing some interesting facts about Sirius, the Dog Star. Your objection as to the vast distance to Sirius is not a fair one: some of the finest, science fiction stories written have caused their protagonists to journey (at many times the speed of light) to stars and space more distant than Sirius! Science fiction is an interesting mixture of fact and fancy and we authors have to take lots of license. Your point on the temperature of Sirius is well taken. Sirius would, indeed, be an uncomfortable place for "The Falcon" or Millstein, resourceful as they are! I have already written a sequel wherein Millstein goes after the villainous "Falcon," and Millstein goes to Venus! So, my English cousin, I score another point for you, even if you're a bit super-technical! Friend, do you not fail to see the beautiful forest, because of the trees?

You also object to my atomic theory of protons and electrons. You say: "The discovery"

(you should say 'theory') "that atoms contain positive electrons and neutral particles has upset all that."

I'm fully aware that recent theories (let us stick to the word 'theories') set up that the nucleus of an atom is not properly said to consist of protons and electrons; and that these new theories claim: that no unassociated electrons occur; that the positron (or positive electron) is a positively charged particle (very small) detached from the proton and exists at only high velocities; that the neutron consists of a proton-electron compact combination of a small size, millions of times smaller than the normal hydrogen atom; that it is believed such neutrons and positrons are present in various atoms. As science advances the structure of the atom becomes more complex.

For many of my forty years, I have (all the while keenly aware of my vast limitations) been an ardent student of science. I've tried (vainly perhaps) to keep pace with the glorious march of science.

As you perhaps know, my friend and critic, I've published in AMAZING STORIES a series of the atomic adventures of "Posi and Nega"; and there's to be more published of the tiny electrons—if Nega doesn't become angry with the irrepressible Posi and short circuit him!

Before undertaking to write the "Posi and Nega" stories and other yarns in which I set up the atomic structure of sundry elements, I decided definitely to stick closely to the proton-electron theory for the puzzling atoms.

My first reason was for art's sake. You must concede that it is easier and more understandable for "Posi" to be a positive electron (or proton), and "Nega" a free negative electron, both in an atom of hydrogen—and let it go at that. If we science fiction authors involve our narrations with too many abstruse theories, our miss. would be merely scientific essays. We must have an understandable simplicity of theory in our stories; and as long as we stick to basic facts we should not be unduly criticized. Science fiction is difficult to write—at least for me!

My second reason for using in my stories only the proton-electron theory is that this is the older and accepted standard of chemistry. This old rule is: To discover the make-up of any element, take the full number of the *atomic weight*. That represents the number of *protons* in the nucleus, as in a gold atom, 197. Now the number of *free electrons* is represented by the *atomic number*, in the case of a gold atom 79. The nucleus of a gold atom therefore consists of 197 protons and 197 minus 79 leaves 118 nuclear electrons. The marvels of chemistry have amply proved this theory with numerical certainty.

No doubt, my English friend, the later scientists are right: that there are these newly dis-

covered positrons and neutrons in the atoms.

But for good, cogent writing, I must stick (for the present at least) to the simplest atomic description. I'm trying to express with my futile pen the aggregate, metamorphic picture which science has developed in the last decade.

In one of the future "Posi and Nega" stories, I'm going to consider having "Posi" (the proton) and "Nega" (the negative electron) come into actual contact and form a neutron! Tell me, Fans, shall I say they get married?

Or mayhap I'll have "Posi" (the proton) lose a small particle from his mass because of some great heat increasing his speed to the danger point! The lost particle will become a positron!

I'll leave it to you, my readers: shall this weak pen attempt such a daring and intricate theme?

I warn you: if I do, I'll probably get into deep technical waters and sink into oblivion—forever!

The readers of AMAZING STORIES are students and thinkers. They take the meat from the stories and digest it; but they are wise enough to spit out the bones.

And, now, my friend and critic, allow me to give you a word of criticism, or advice: Don't take the last theory of the atom as final; or that it settles the whole abstruse problem. We may have a new and wonderful discovery any day, a theory which can be proved beyond the question of doubt! Keep your mind open and receptive! This is the age of wonders!

And now that I've got this technical answer off my mind, I want to admit frankly that I'm only a student of science, floundering sluggishly at the bottom of a vast sea of yet undiscovered wonders of knowledge. But it's better to give you "a pain in the neck" than never to be noticed at all!

And sincerely, I'm glad to have your criticism; and grateful for this chance to give "AMAZING" readers my ideas and thoughts.

Joseph Wm. Skidmore,
145 No. Louise St.,
Glendale, Calif.

(This letter is so complete in details and so well put that we cannot comment upon it, except to say that we like it.—ESTRUE.)

Back Numbers of AMAZING STORIES to Be Disposed of—Notes on Authors and Stories Editor, AMAZING STORIES:

I have been reading AMAZING STORIES on and off for a number of years, and have collected about fifty (50) issues. I will sell or exchange these for other science fiction magazines. Note: Issues in 1928, 1929, 1930 and 1931 have no covers, otherwise they are O. K. 1928: Nos. 4 and 12, 1929: 4 and 6, 1930: 3, 4, 9 and 12, 1931: 1, 5, 7, 8 and 12, 1932: 1, 6, 9 and 12, 1933: 1, 4, 5, 8, 10, 1934: 1, 4, 6, 9 and 11. Quarterly: 1930 Summer and Winter.

1931 Fall, 1932: Winter and Spring.

I have just finished the November issue and is it a wow! "Through the Andes," excellent. Must be since it is written by A. Hyatt Verrill. "Nøekken of Norway," good. "Land of Twilight," promising.

Please give us some more of Professor Jameson and his Zoromes. I feel I have lost a friend. I have waited a long time for a sequel to "Troyanna." Where are Jack Williamson and Miles J. Breuer? I have missed them.

I will now close and waste no more of your time, wishing A. S. the best of luck in the coming year.

J. McDermott,
166/1, Muirhead Road,
Shanghai, China.

(We think you will probably have no trouble in disposing of your back numbers of AMAZING STORIES, but of course as you are on the other side of the world, it will involve a certain amount of delay. You will hear again from Professor Jameson and Dr. Breuer. Your appreciation is very pleasant. EDITOR.)

An Appraisal of Our Issue
Editor, AMAZING STORIES:

Here I am again. I suppose you regard me as a monthly pest by now; something that can't be helped. You'll probably take one look at the printing on the envelope and throw it in the good old W. B. right away.

Well, here come the onions and roses, right through from cover to Discussions.

Cover—Pretty good, but why does Morey always make such spindly legs on people? While we're on the subject of pictures, I want to ask you to get somebody besides Morey for illustrations so that he'll have some competition. When he has some competition, Morey will perk up and draw much better.

Stories—"Rape of the Solar System" a very good yarn, even if it was rather blood-and-thundery. "Sunless World"—Super-melagogous! Stupendolossal! The mag was worth two bits for this story alone. The first Professor Jameson story I have read, although I've heard of his fame for a long time. Here's to many more stories like it! "Beyond the Universe" Fair. "Men Created for Death" Swell. Nothing extra, just a good story. "The Million Dollar Gland"—Fair.

On the whole, a very good issue well worth 25c in any man's country. I think AMAZING is improving steadily and if you continue to improve and get back the large size or at least the old lettering on the cover, you'll soon be back on par with the good old days and I'll be one satisfied reader.

Arthur L. Widner, Jr.,
79 Germant Avenue,
Quincy, Mass.

(We are glad to get such a letter, for we

need encouragement in our efforts to please our readers. Especially do we appreciate what you say about our improving. We hope we shall continue on that path.—EDITOR.)

Compliments from a Young Reader
Editor, AMAZING STORIES:

Just a few lines to tell you what I think of the December issue of AMAZING STORIES.

"The Rape of the Solar System," by Miss Stone was super-excellent. "The Sunless World," by Jones was excellent. "Men Created for Death," by Kostkos was good. "The Million Dollar Gland" and "Beyond the Universe" were fair. The serial "Land of Twilight" by Preston is coming along fine. Of course the Discussions are always good.

Morey (in my opinion) is better on the inside illustrations than on the covers.

I'm sixteen years old and have read your magazine for a number of years.

Albert Smith,
3719 Lee Street,
Los Angeles, Calif.

(We have felt that some of our severest critics were in the youthful class, but here is a complimentary letter from a young reader, who started years ago to read AMAZING STORIES. A letter like this while it is more than acceptable does touch us in our inner consciousness, but has "our magazine" failed in the past in not being as good as it should have been?—EDITOR.)

Standing at Attention with Closed Eyes—
Sympathetic Sound Vibrations
Editor, AMAZING STORIES:

This is the second letter I have written to you since AMAZING STORIES first was published. There are two experiments that I would like explained.

1.—One evening at a gathering at my home, for the sake of amusement, we were trying tricks, etc. A friend of mine told me to get up, stand at attention, then to close my eyes, no sooner were my eyes shut than I began to sway forward and backward. Several others tried it and the results were the same.

2.—Taking an Hawaiian guitar which is tuned, and plucking one of the E strings, I have noticed that the other E's will also begin to vibrate. Pluck the A and the other A will vibrate also, of course the strings must be well tuned. Now, I know that one E will sound another E because they're octaves, but each octave is twice the number of vibrations of the one next to it. Aren't the sound waves (vibrations) also twice the length of one octave to the other? Will you kindly give me a more correct explanation?

As to the AMAZING STORIES magazine, I suppose I couldn't write anything that hasn't been said before, but I do want to repeat, that I like to see our mag. back to its former size

and the same old title. The stories, well there is nothing to kick about, the variety is great. The drawings, well there I must differ, as has been said before, Mr. Morey is a wonderful artist as is proven by the cover, even Paul couldn't find fault with it, but the inside illustrations are too much like those common mags, and that's what hurts. By that I don't mean his drawings, but his shadings. Why can't they be more on a definite, clear, outline ink drawing, like those of Mr. Paul. Please excuse this criticism, but Mr. Morey draws too well to hide anything in haziness.

Victor Dell'Angela,
332 Bathurst Street,
Toronto, Ont.,
Canada.

(The fact that a blind person can stand at attention suggests that your trouble in maintaining your position was due to what are sometimes called 'nerves.'

Any string when sounded will start strings one or more octaves below into harmonic or overtone vibrations. The strings must be exactly one octave or a number of octaves below the sounding strings. If a string besides giving the fundamental note also gives overtones, then it will start vibrations in strings above it by the action of the overtones.

Your drawing enclosed in your letter is very interesting.—Editor.)

A Witness of an Explosion on Mars Describes What He Saw

Editor, AMAZING STORIES:

Have just read the March copy of your magazine. The first I've seen (but it won't be the last), and I like it immensely as I have always been one of those who believe that anything is possible. I have another reason in writing you, however. In your story "Terror Out of Space," mention is made of a mighty explosion that took place 1,000 years before. About that I know nothing, but this I do know, that a tremendous one occurred some sixteen years ago. I thought some of your readers might be interested in the facts of the case. As far as I have been able to ascertain, I am the only person who witnessed the occurrence. It was some six weeks (forgot the exact date) before we of the A. L. Horse took Damascus. I was in charge of the 14 Reg's horse pickets near Ludd in Palestine. About 2 A. M. I reached the top of the slight rise on which our horse lines were situated and turned to go down again. As I turned I was amazed to see shoot out from Mars, who was on the almost level with my eyes a great blast as from a searchlight, followed some second or two seconds later by another. My thoughts instantly flew to what I had heard re supposed signals from Mars, but what I saw could not have been signals for while somewhat resembling a searchlight beam, they were far too broad for

their length. In color the first flash was like that of the first half of a searchlight beam, i. e., the half nearest the light, the second several degrees less bright.

A. G. Clark-Kennedy,
Stanley Villa,
Cowes, Phillip Island,
Vic., Australia.

(Your letter is most interesting, and it reads a little like an episode in a story in our magazine. You show yourself to be an accurate observer, and a good describer.—Editor.)

Comments on the Story, "Land of Twilight" *Editor, AMAZING STORIES:*

I have just finished reading your magazine called AMAZING STORIES. The stories are of a highly imaginative and very interesting order. One particular story that I liked a great deal was the one just started called "Land of Twilight," by Robert Page Preston. In my opinion it is very constructive and educational. I shall continue reading stories of this type, and shall advise all of my friends to do the same. I hope I shall have the privilege of seeing another one of these stories in print soon.

Kenneth J. McCullough,
544 Irving Street,
S. V. California.

(It is of distinct value to get such letters as yours, criticising one or more stories. The judgment of our readers is one of the controlling factors in our work, sometimes to be modified in our use of it. We shall always be glad to hear from you.—Editor.)

Criticism of the December Issue— Back Numbers Wanted

Editor, AMAZING STORIES:

I think AMAZING STORIES is improving greatly. One thing you could improve on is your covers. I believe that there should be more covers showing space ships and different means of interplanetary transportation.

Concerning the December issue, these are the ones I thought the best. 1. "The Sunless World." Most of it was pretty good, but there were a few parts that were a bit too fantastic. 2. "Men Created for Death." This story does not seem so far ahead of the times as most of the others.

I don't know why you printed "The Million Dollar Gland." I thought it was terrible.

I would like to buy a few of the back numbers. I wish some of your readers who have these numbers for sale cheaply would communicate with me.

Marvin Davis,
320 1st Street, N. E.,
Auburn, Washington.

(For back numbers you might address Subscription Department at this address. You will probably get letters from readers who have them to dispose of.—Editor.)

The "Land of Twilight" and "Noekken of Norway" Highly Approved Of
Editor, AMAZING STORIES:

For some time, though not regularly, I have been thrilled by your magazine, AMAZING STORIES. Some of the stories are truly amazing and some amazing to the point of delightfulness. I do love a good wholesome play-of-the-imagination to snap me out of my pokey and sordid dullness and give me entirely different mental pictures to gaze at with my mind's eye. This last number of yours I thought especially good and when I struck the new and imaginative serial "Land of Twilight" (most alluring and promising title) by Robert Page Preston and when I had finished reading it I felt like a new person. I found myself playing with this thought and that, conjured from the story, for quite some time after I had finished reading. It goes without saying that I am eager for the continuation of the story—in fact I hope it will go on and on, in the same vein for quite some time.

I think your illustrator is delightful, too. I know that it was his fascinating picture of the weird lake in Norway that made a deep impression of that story in my mind.

Eva Lord,

359 Fillmore Street,
San Francisco, Calif.

(Like all or nearly all normal personalities an editor, this particular one at any rate, needs encouragement. An interesting thing about "Noekken of Norway" is that the author spent some months in that delightful country, where the editor also spent some very happy weeks one summer. It has real atmosphere.—EDITOR.)

An Admirer of Jules Verne Tells How He Came to Read AMAZING STORIES
Editor, AMAZING STORIES:

I have been an interested reader of AMAZING STORIES since the first issue of April 1926 and I have every copy in as good condition as when I received them. I go over them quite often and in comparing the earlier issues with the present ones, I find that there was much better illustrations in the former. For me Paul was the best artist that AMAZING STORIES ever had.

I am glad that you went back to having the cover design illustrate a scene in one of the stories, the few issues that you put out with futuristic covers seemed silly.

I notice that every time that you publish a Jules Verne story there is always a lot of criticism, but that is because they do not understand him. Jules Verne is a Master the same as Verdi and Wagner and Mozart in the musical world. A lot of people will listen to some tunes that are thrown together by somebody that hardly knows one note from another, and as long as there is a lot of noise, they say it is good, while they will say that the great classics are dull.

Jules Verne's works were written many years ago and are still read, why is that? It is because they are masterpieces. I'll bet that not many of the stories that are published in AMAZING STORIES will he read 50 years from now.

Take for example the last story "Measuring a Meridian." The science is exact, the method is exact. After reading it almost anyone could go out and measure a Meridian himself, and the description of the country is just about what it was at the time it was written. In every one of his stories the science is exact, the characters are true to life, and the scenes are described fully, then there are generally brought in some bits of history, frequently some history of a scientific nature that is not generally known. Compare that with fantastic stories of space ships that go thousands of light years in a few seconds and harnessing the power of hundreds of suns and in which the science is not nearly right.

It was an advertisement in *Science and Invention* saying that a new magazine would be published and that all of Jules Verne's stories would be published that started me reading AMAZING STORIES. Sometimes it has been hard to get the magazine, after the Canadian Government put a duty on them and they stopped coming into Canada, but I always managed to get them.

Personally I prefer the large size, it seemed more dignified and looked better on the shelves.

Alfred St. Laurent,
St. Raphael, Que.,
Canada.

(AMAZING STORIES is now being published in Canada, so there should be no difficulty in getting copies. Write to us if you are troubled in this matter. You are perfectly correct in your estimate of the works of Jules Verne. He built up a great appreciation of his works in science fiction.—EDITOR.)

A New Reader's Appreciation—A Correspondent of the Fair Sex
Editor, AMAZING STORIES:

TODAY I stumbled upon your magazine, AMAZING STORIES. The stories seem to be highly imaginative and very entertaining.

One story I liked was the serial just started, "Land of Twilight" by Robert Page Preston. It gave me many things to think about, at least to wonder about and I hope it will continue in the next edition.

I know my husband is going to like your magazine too when he gets home tonight.

Marie Moen,
294 Carl Street,
San Francisco, Calif.

(We always get the nicest kind of letters from correspondents of your sex. Some readers who made our acquaintance, nearly ten years ago are still with us.—EDITOR.)

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BACK COVER